ANTHROPORTSCAPES

Honors Thesis
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This thesis is dedicated to my parents and my sister for always supporting my endeavors.

Additionally,
It is dedicated to my wonderful mentors who've helped guide me throughout my life.
It is dedicated to my extended family and friends who have helped from near and far.

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PREFACE

"The modern airport challenges ways of seeing landscape in many ways, erasing conventional boundaries in vision, as in so much else. Flight has been the twentieth century's most radical challenge to conventional ways of viewing the earth. The airport concentrates and conflates diverse experiences of linear and aerial perspective; from the stacked airliner above Heathrow we see the spaces of West London and the airfield itself spread below as flattened landscape geometry. Perception, clarity, and color alter with descending aircraft as we enter the landscape at a progressively lower angle of sight. This changing angle of vision and speed and trajectory of descent make for a continuous kinesis as relations among landscape elements shift." (Cosgrove 229)

This thesis is an extension of my lifelong travels and dreams of designing airports. I have traveled to numerous airports across three continents throughout my 22 year life. They have always amazed me even when we were trapped for hours on end for some bizarre reason. However others around me did not seem to enjoy the journey and that prompted me to start investigating what was good and what did not work at airports. I first began this exploration by diagramming all the airports I have personally been to or through. It was a very important exercise to ground myself and also it provides some background on why I am embarking on this thesis. The experience and process of traveling through airports still continues to amaze and excite me, I hope that I can play a part in envisioning the sustainable airport of the 21st century.

(Photograph by: I Maria Calderon)

Figure p.1 | Airports that I have visited
The starting or ending airports in red indicate airports which were either starting or ending points of that trip whereas the yellow hub airports indicate swtiching points.

The following sequence of images highlights one of my recent airport landings. As the plane descends the outer fringes of the city comes into view, slowly creeping towards the downtown core. Once one sees the bridges and the rivers the city unpacks itself, the flight has reached its destination. However we keep traveling, the skyscrapers exist for a brief moment but being to fade into the distance as the plane journeys to the airport on the urban fringe of the city. Do we then become lost in transition?

ABSTRACT

How does the airport alter the performance of a city? How does the airport plug into the larger landscape of an urban region? What meaning does the airport create for the millions of people who fly through often without pause? A web based survey was used to ascertain a wider scope of public views on airports as well as gathering opinions on some of the critical questions surrounding their future. Namely should the airport be connected to its local region, then should the airport be opened up as a citywide destination to the public [or non-passengers], and finally should the airport become a forum of social networking? Synthesizing these responses with different readings on airports as well as a variety of observations a framework for analyzing and designing these environments emerged. By considering earlier models in an attempt to understand the evolution of airport typologies and their connection to the urban landscape the concept anthroportscape was developed. The anthroportscape is the democratic, resilient, organic, and sustainable progressive evolutionary pathway of the airport. As the focus of this honors thesis investigation applying this urban design framework to the southern Indian city of Hyderabad yielded many fruitful speculations for sustainable development of the city and region. This further reinforced the conclusion that airports can drive sustainable urban development. Landscape architects mediating between multiple scales of development will play a critical role in airport design. This new paradigm of design will involve a broader spectrum of designers, planners, and thinkers. Airports are amazing destinations that have the power to catalyze the human spirit towards making a brighter future.

INTRODUCTION

"Cities are for the face-to-face meeting of people, for the exchange of ideas and the purpose of trade. They bring a diverse number of people together in shared spaces with access to a wide range of public amenities. They are the heart of our culture and engines that drive our economy. The maintain quality of life, cities should be socially inclusive, environmentally effective and well designed." – Richard Rogers (la Biennale di Venezia, p. 82)

At the dawn of the 21st century, two forces seem to be permeating all types of discourse, cities and globalization. Currently more than half of the world's population lives in cities, and they grow by 180,000 people daily. (Janssens, 2008, p. 106) By 2050, cities will swell to encompass over two-thirds of all humanity. These hubs of human activity are the key nodes on the planet and most people actually think of the world as a network of cities, not countries. (192021, 2009) They are the lynchpins and drivers of global networks and transactions. Directly tied to the growing networks of globalization is global mobility. (Parker, 2002) "The material processes of globalization are both enabled by, and place ever-growing demands on, the provision of transportation infrastructure and technology, particularly in major cities that function as nodes in global networks." (Cidell, 2006) The global nature of the world now means that any changes or policies are not just localized but will ripple rapidly across the planet. (Schwaiger & Rapp et.al., 2007) Concurrently there is a strong understanding that they key to a sustainable future is living locally. Instead of drawing our resources from across the globe, we need to be resilient within our own regions and draw all our food, power, and other resources from smaller radii from where we live. (Tumber, 2009) As a result of these pressures, there is the need for local action on a global scale.

What is the one place that links the local and global together? Airports! They are the singular structure that bridges this connection. They are quintessential part of the global exchange network, but simultaneously they have a huge impact on their local environment. Airports are the place that makes these flows tangible through the transaction of people. Cities build airports in hopes of becoming part of the

global club of world class cities. For them to run however, they draw upon a huge amount of local resources, from energy, to water, to the compliance of citizens dealing with aircraft noise pollution. It is however a time when cities are rapidly growing, and with the increasing population pressure, many cities are feeling the growing pinch of resource availability. With the growing size and scope of cities, many are pressured to expand their infrastructure at every level. From their local roads, to the largest of ports, everything seems to be changing. In this era of volatility one key point cannot be lost, cities are for habitation. In the rush to build, there is a danger that cities might develop huge infrastructure projects that sacrifice healthy, meaningful places.

We are drawn to cities because we are drawn to people. Each city has its own diverse footprint which is an amalgamation of its natural geological history, human history, current condition, and future vision. Each city is a unique agglomeration of particular cultures and each a separate breed of human diversity. Cities are the collective expression of our human brands. They are created by the people who live there, as well as the people who visit, and the vision they project. "A brand is not a product; it is something much less tangible – an aura of meaning." (Klingmann, 2007, p. 55) There is a great difference in opinions, backgrounds, values throughout a city and its citizens. This diversity is what allows society to thrive. "Homo sapiens are a social species; almost all of what we know we learn from each other. Dense cities, like New York, succeed when they take advantage of this fundamental aspect of our humanity. They thrive by enabling us to connect with each other, which then promotes learning and innovation." (Glaeser, 2008) This quote from the New York Times sublimely highlights the critical significance of cities for the future of humanity.

Sometimes diversity has been portrayed as a problem with the differences among us leading to conflict and war. There is an ever greater danger in moving towards generic homogenization, for it would be innately inhuman. We have evolved on this planet of great diversity and this uniqueness is what can lead to harmony. At every level we struggle to diversify and not conform, this is our humanity. We do not all want the same job or love the same food or people. Allowing each of us to fill our own economic, social, and cultural niches is what allows

for ecological balance. It is the greatness of human diversity that is our proudest and greatest display of humanity.

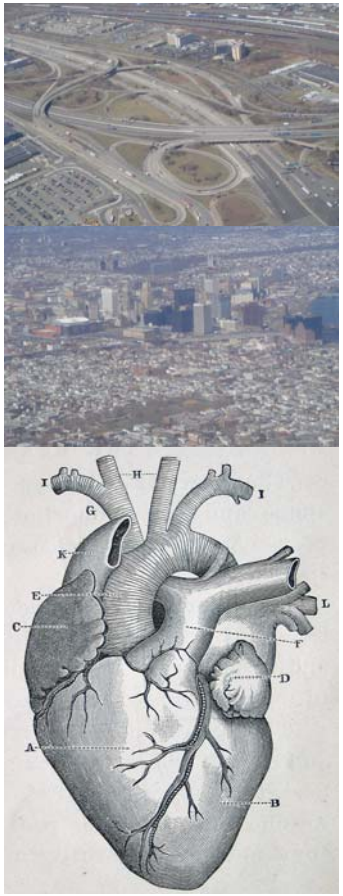
A harmonious existence is what can lead to a sustainable planet that future generations can inherit. A major factor in the creation of this diverse harmony among people is our built world; specifically our cities, where over half the world's population resides. Does the design of spatial environments affect the behavior and culture of people? If so, how does the design of our cities affect our human diversity, is it squashed or propelled? Cities are for habitation, and not just the residential areas, but all of their components. Although each city represents a wide swath of humanity, on the whole they each have their own unique identity. This diversity among the global city network allows each to fill a possible ecological niche on the world map.

There is an increasing exchange of culture, information, memes, temes, and genes between our cities. This is accelerated virtually through the internet, and physically through human movement. These massive flows of information and people are intertwined at many junctures. For example with the explosive rise of mobile phones, while we navigate between cities we are simultaneously navigating through cyberspace. This is a dynamic and parallel interactive process whereby both physical and virtual flows are not separable, but codependent. Therefore most contemporary city analysis treats the urban form as a living organism that is constantly shaped and reshaped by the multitude of flows that define and cut through it. It is the primary lens through which we understand our modern urbanism. If the city was a living organism, its currency of transaction — blood cells — would be people. Our lives and activities are what keep cities alive and thriving. "A successful organism is one that reciprocates with its environment, and helps to enrich the environment on which it depends." (Robinson) Whenever the city grows infrastructural organs, they leave behind a residue of dead space where almost no urban transaction occurs. (Broekhuizen, 2003, p. 120) When they are purely utilitarian solutions to addressing problems of transit infrastructures can destroy urban fabric. (Ingersoll, 2006, p. 124) Although most infrastructures are designed to stream people through the city, if that is their only purpose, they will eventually wither away as people cannot stop by and enliven the space. Instead traffic infrastructure should also be imbued with

social spaces that can be dwelling destinations. (Boer, 2003, p. 112) In continuing the analogy, people are the blood cells that activate and create life within the whole city. The more blood that can reach a city organ, the more vibrant it becomes. Infrastructure designed as art can create civic meaning and purpose. We cannot just build great infrastructure that is a sound "technical space," but rather one that has a soul and welcomes human dwelling. (Nio, 2005) We need to make infrastructure habitable. At this key juncture in time there is one infrastructure type that is very critical, the airport. If the city represents the collective human brand, then the airport is the concentrated essence of that identity. The airport is uniquely important for several reasons.

1) They are the most massive of city infrastructures and are connected to huge flows of people
2) They are the link from the local culture of the city to the globalized world abroad
3) They are revolutionary structures that captivate and stretch the boundaries of human imagination

"The airport is a structure that is also an infrastructure. It is a structure designed for connection." (Fuller & Harley, Aviopolis, 2004, p. 104) Airports are critical urban structures that connect the city with the world. The airport regulates flows of people between cities and in continuing the organism analogy this pairs the airport most closely with the lungs. If the center of the city is the heart, constantly beating to provide energy and life to the city, the roadways and paths of movements are the arteries, connected to the far reaches of the city. These arteries reach out to the lungs, the airport, to take in and expel people, acting as the filtering mediator between the city and world. For an organism to survive, the healthy functioning of all body parts is essential.



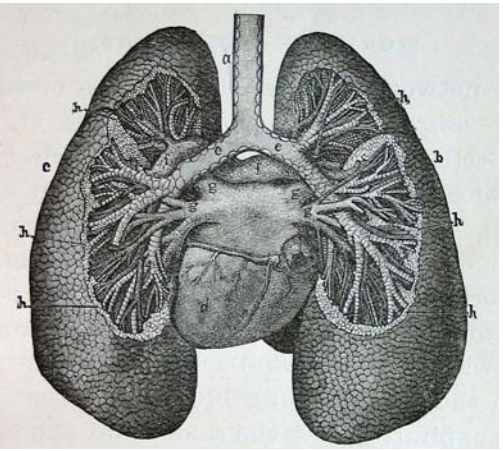
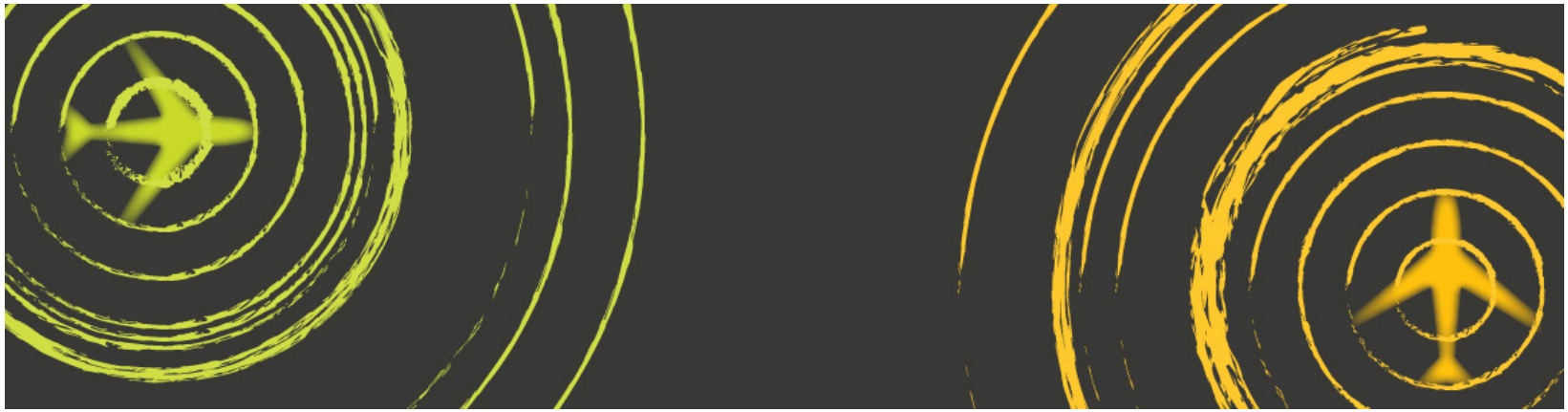


Figure i.1 | City as Heart, Roadways as Arteries, Airport as Lung

The city and airport shown are from Newark, NJ. The city drives the energy and pulse of the city while the airport is the organ which mediates the connection between the city and wider world. The airport expands and contracts with passenger flows just as the lungs function. They both are also the filter between the external and the internal. *(heart and lung photos from flickr.com user: koreana)*

Airports hold tremendous importance and hope, but at the same time they have the potential danger of going in the opposite direction. If they continue to evolve on a path of pure globalized infrastructure with little regard to the cities and people that power them, then they have a great propensity for harm. "The best airports are designed, not as minimalist structures or 'nowhere architecture,' but as distinct spaces that allow people to enjoy, relax, and interact within an environment that captures the imaginative realm of flight." (Gottdiener, 2001) This is why airports need to be urgently refocused with a human and environmental lens. They are within our collective power to change their very manifestation. Airports in the 21st century will be the great drivers of sustainable change in local city meshes as well as the global network and in determining the future course of humanity.



GROUNDING

1. PLACE & PORTSCAPES = PORTS + URBAN LANDSCAPE

A / PLACE & CITY

"'Sense of place' is an almost metaphysical notion, which some consider pure nonsense and others concede might well exist, but it certainly cannot be engineered or designed." (Reijndorp, 2003, p. 86) A sense of place is often talked about in the context of city planning, architecture, landscape urbanism and numerous other venues. Place is essentially a human construct, it is the perception of space through the various filters of context, senses, and perception. (Kirn, 2008) As Kirn exposes directly in her thesis, place is necessary, and especially critical is the realization that place creates meaning, or at least it should. A sense of place is an abstract but innate human sense that can influence psychological or emotional well-being as well as action. (DeMiglio & Williams, 2008) There is a growing body of evidence that sense of place is important for one's health.

"The Seduction of Place," is the title of Joseph Rykwert's seminal work on the subject of place in application to cities. Rykwert believes, "that the city is a precious, essential and inalienable part of the human achievement." (Rykwert, 2000, p. 20) The dense fabric and activity of the city is what helps construct its strong sense of place. The city might provide a stronger sense of place compared to more horizontal development, because of the relative magnitude of its core population. The manner by which this image and sense of place is constructed is another matter; one that was studied extensively by Kevin Lynch, as he sought to demonstrate the human mechanisms which we use to identify and construct place. "Kevin Lynch understood that as one moves through the contemporary city, its disparate parts make themselves known and form a comprehensible narrative-urban space is mediated by movement, and time." (Wall, 2005)

According to Rykwert, the cultivation of the city as a strong generator of sense of place has a historical narrative. The Greeks were divided into various nation states, and hence were more of a polycentric urban form, whereby no one city was able to dominate the others. This

was in marked contrast to the Romans, who developed one of history's largest empires, but everything was connected back to the city of Rome. (Rykwert, 2000, p. 16) Although Rome was the city, its name grew to represent much more; however, it was always innately tied to the image of the city. Similarly today, New York, compromises a broad series of places, and meanings, but the image of the Manhattan skyline is so powerful that it dominates every marketed souvenir of the city.

The term which captures the essence of place is Genius Loci, the genius of a place. Each site, city, or location has a special set of characteristics that makes it unique and gives it greater meaning. This is its genius and if it is understood and allowed to seep through in its application to architecture and design, then the place might be more successful or genuine.

The Importance of Place

Why is a notion of a place, or even attachment to that place important? This can be analyzed from a variety of angles, one being the context of biology. As humans living on earth, we are intimately tied to the environment which we inhabit. The environment or place is the first condition that defines all existing things; we don't initially exist, and then subsequently exist somewhere. (Stefanovic, 2008, p. 46) This connection to our environment is the fundamental aspect of new biology: the control of our genes is not simply internal preprogramming but is a constant reaction to our perception of our environment. (Lipton, 2007) It might not be the traditional accepted view of genetics but a great deal of new and old evidence does not fit the old view and only works in the context of environmental perception. So, at a fundamental level, our perception of our environment is directly related to our physiology and genetics. Our psychology and physiology are innately linked.

For the purposes of this thesis, this level of depth won't be necessary to acknowledge the importance of place. In a series of articles assaying the connection between place and health, Eyles and Williams separated physical from psychological from mental health. They still

discover a wide variety of place related health issues that need to addressed by design and planning. However, in defining the importance of place, we are not constricted to the filter of human wellness. Placemaking has a broad series of positive attributes: cultural, political, practical, and emotional. Defining a physical region with cohesiveness can lead to better relations between citizens as they have a common identity which links them together. A strong sense of identity also might make it easier for people to navigate or wayfind, giving placemaking a strong practical purpose.

How is place and identity of cities created?

This sense of place and identity is an internalized human construct. It is a hodgepodge, chock-a-block, brew of various elements. It might be a response to architectural elements or to specific social fabric, or a combination of the two. There are an infinite series of forces and affects that could work together to create identity. Some of them are easier to understand and investigate, such as architectural icons that are often selected specifically to represent the city usually through various marketing paraphernalia. "These are unforgettable monuments, symbols not merely of their own purpose but of everything that lies within reach of their shadow. New York without the Statue of Liberty, London without Big Ben, Athens without the Parthenon: such prospects are enough to inspire a sense of dread." (Scalbert, 1999) These individual monuments have the city imbued in them and act to create identity. This is of course only one avenue of branding, but identity through monuments is strong and can be an important step in the generation of place. So how does a city or a region develop a unique identity?

Natural Geology & Topography

Initially identity of a region developed from the natural geology and topography of the region. As society and civilization aggregated around these areas, the identity began to become a combination of the natural and human driven processes. Civilization originally developed along the banks of major waterways as this was the primary means of transportation. Also many cities used certain topological character-

istics as natural defensive supplements. Furthermore, climate perhaps played an even bigger role in the development in the shaping of a region as this dictated what kind of produce could be grown, cash crops raised, and so on. Early cities and civilization was primarily defined by the natural conditions that surrounded them. For example the small south Indian state of Kerala, had its identity defined by the long stretch of coastline and string of ports. This initial identifier is what gives places they're first coat of uniqueness. What becomes fuzzy and unclear is the distinction between scales. What differentiates the city from the region and what are the identifiable elements that solidify these distinctions? With the industrial revolution and rapid building across peripheries most planners began to dissolve strict definitions of scale in separating city from region. Of course certain cities such as Paris or Venice are clearly defined, whereas a multi-city region such as the Dutch Randstad is less understood. (Primas, 2008, p. 190) One source of identity continuous between the region and city are the natural geographical features which are not limited by human drawn boundaries.

Many of the world's prominent cities today are either by the ocean or include a major river running through their metropolitan core. However as time progresses, many of these natural elements become masked and their presence goes unnoticed. For example, the Ilissos River in Athens, the Seine in Brussels, and even many tributaries of the Thames in London are lost underground. Attempting to tame nature in the city was the measure of progress for much of the 19th century. Subsequently, the reverse strategy started to become important as city development tried to reconnect to the nature but it was in a strictly controlled way. Man-made parks such as Central Park in New York and artificial lakes throughout many cities are possible only with the hidden vein of the original nature in the site. Currently we have arrived at a stage where we are trying to rediscover our original connection to nature. It will lead to the discovery that nature and the city are dialectically related to each other for the production of space. (Kaika, 2005, pp. 8-9)

Increase in social Interaction

An increase in social interaction and human networks helped to develop the identity and sense of place that people experienced. "Early

communities responded in a direct way to the nature of the place they were in. They normally responded strongly to the natural topography." (Halprin, 1969, p. 154) Of course nature and the original quality of the city are only the first determinants of identity. Natural features as a source of identity are still primarily a human construct. The available resources possessed a commoditable source of wealth, a special spiritual power, or some other faculty. These natural features attracted people to settle there at ever growing numbers. Human industry and culture based on these primary factors are really the grand shapers of a city's essence. As people migrated and lived closer together in the early cities they set in motion the social networks that would connect and define the various aspects of that particular region. These early cities, nation-states, and empires provided organization, structure, and identity at a variety of scales. Originally these organizational scales were seen just as simple categories for classification but recently it is believed that these scales reflect real social differences in the organization of society and are themselves byproducts of social interactions. (Colligne, 2005) Over time human development of cities began to overpower nature, instead of responding to natural cycles, technology allowed us to overcome these challenges. Identity increasingly became a construct of human social activity rather than the natural surroundings that originally shaped that region. "The dynamism and pride of New York is no longer symbolized by the tall buildings, but by the diversity and energy of its population." (Reijndorp, 2003, p. 86) Today cities are the strong brands that we identify and recognize, our world is shaped by their whims, successes or follies. Instead of civilization responding to natural conditions today it is primarily driven by human forces; cities are the critical nodes driving human activity.

Increased Exchange

"The specific 'feeling' evoked by a place emerges because of years of use by particular groups and because of ingrained routines, by which a place or route gains a particular atmosphere, reputation or 'name' – something which, over the course of time, can prove highly resilient." (Reijndorp, 2003, p. 87) These points of resilience manifest themselves in a different ways, but perhaps their strongest manifestation is the city. Understanding the identity of cities really becomes important when there is exchange between them. Due to the natural endowment

of one city, they might produce more of a certain resource that another city or region wants. Over time groups of cities began to connect their networks, social, economic, and ecological. Goods and commodities flowed from one region to another. For example the gold for salt trading that used to happen throughout the African kingdoms around the Sahara Desert in the 1300s. (History Channel) The trading and traffic of these goods helped to shape the identity and character of the region. These goods then became services and the services became commoditized and exchanged across the globe. Throughout history important trade routes helped shape the beginnings of globalized identity. There were mercantile routes such as the Silk route through Asia, the water based spice routes. Some were less noble, such as the triangle slave trade between Europe, Africa, and the Americas. It is a dark stain of human history to commoditize and trade human capital. However so, these routes of shipping gave identities to cities, tradable items were tangible images that people could keep in their mind and with these they were able to construct images of cities.

Globalization and the forces of movement were driven by the motions of goods and services as well as the flow of people. We are now moving out of the age of commoditized services and are moving into the age of selling experiences and ideas. Everything is mass produced and what is becoming apparent is the need for good design and thoughtfulness. What does power the economic system of our world today is exchange. "For societies to flourish, traffic is a prerequisite." (Schafer, 2005) Our individual power for flow has been increasing because of a growing nomadism. There is an ever increasing series of choices available to us in terms of lifestyle, food, jobs and so on that are not bound to geographical regions as they were before. There is much greater fluidity in individual choice and this collectively has been making a large impact on global exchange. (l'ARCA, 2008) With this blurring across the globe it is more difficult to understand clear cut definitions and boundaries of identity. (Primas, 2008, p. 191) If a sense of place and identity is important, how do we understand and maintain this in an age of fluid meaning?

B / GLOBAL CITY NETWORKS

Increasing Urban Network Condition – The World Today

The convergence of technologies, societies, and networks has led to a global flattening. Globalization has created a rapidly changing world and citizens, societies, companies, and governments need to understand how to adapt to it. Now that the world is "flat" there are numerous implications for how we understand urban conditions and the world today. (Friedman, 2008) This flattening is most felt and driven by the major nodes of transaction, our cities. Currently more than half the earth's population lives in cities and this movement into urban spaces is constantly accelerating. (Janssens, 2008) All over the world, in every region there are increasingly more movements to urbanization and this has drives a whole series of design considerations from both geographical and anthropological outlooks. While the world is becoming increasingly urban, this transition is not uniform. In much of the western world, especially the United States, the process of suburbanization is still the predominant model of development. The vast sprawling environments common all over the United States has provided new types of spaces and are relevant especially in the upcoming discussion of portscapes. Additionally other parts of the world are transitioning from urban to suburban (such as in certain regions of India and China) which will require new design frameworks, especially due to the vast populations of these countries. These spaces of transition are becoming increasingly featured in new theoretical research as well as artistic exploration.

Some of the key terms of these global emerging transitory urban environments are sprawl, drosscape, non-places, and omnitopia among others. This section is not meant to be a comprehensive overview of the world's emerging built environments. Rather it is focused on the peculiar environments that have formed mainly as a result of extensive transportation infrastructure network distributions. Sprawl refers to the developmental zones of the city spreading horizontally decreasing the density of the region. Drosscape is the metabolic landscape waste produced by developing infrastructure throughout the city. (Berger, 2006) Non-Places are a termed coined by French anthropologist

Marc Auge to refer to the global hegemony and ubiquity of many of our archetypical destinations: fast food, shopping malls, and airports to name a few. Omnitopia is a term developed by Andrew Wood that in some ways transcends Auge's definition when applied to certain environments such as airports. Wood argues that the airport is not actually a non-place but an 'all-place' that includes most of the functions of the city in the airport, but with it brings certain characteristic problems, which will be discussed later on. (Wood, 2003) These are some of the key terminologies of urban spaces that have been affected by transportation infrastructure. Particularly, infrastructure that facilitates exchange and trade between different places and analyzing how it has contributed to either the making of or the dissolution of place.

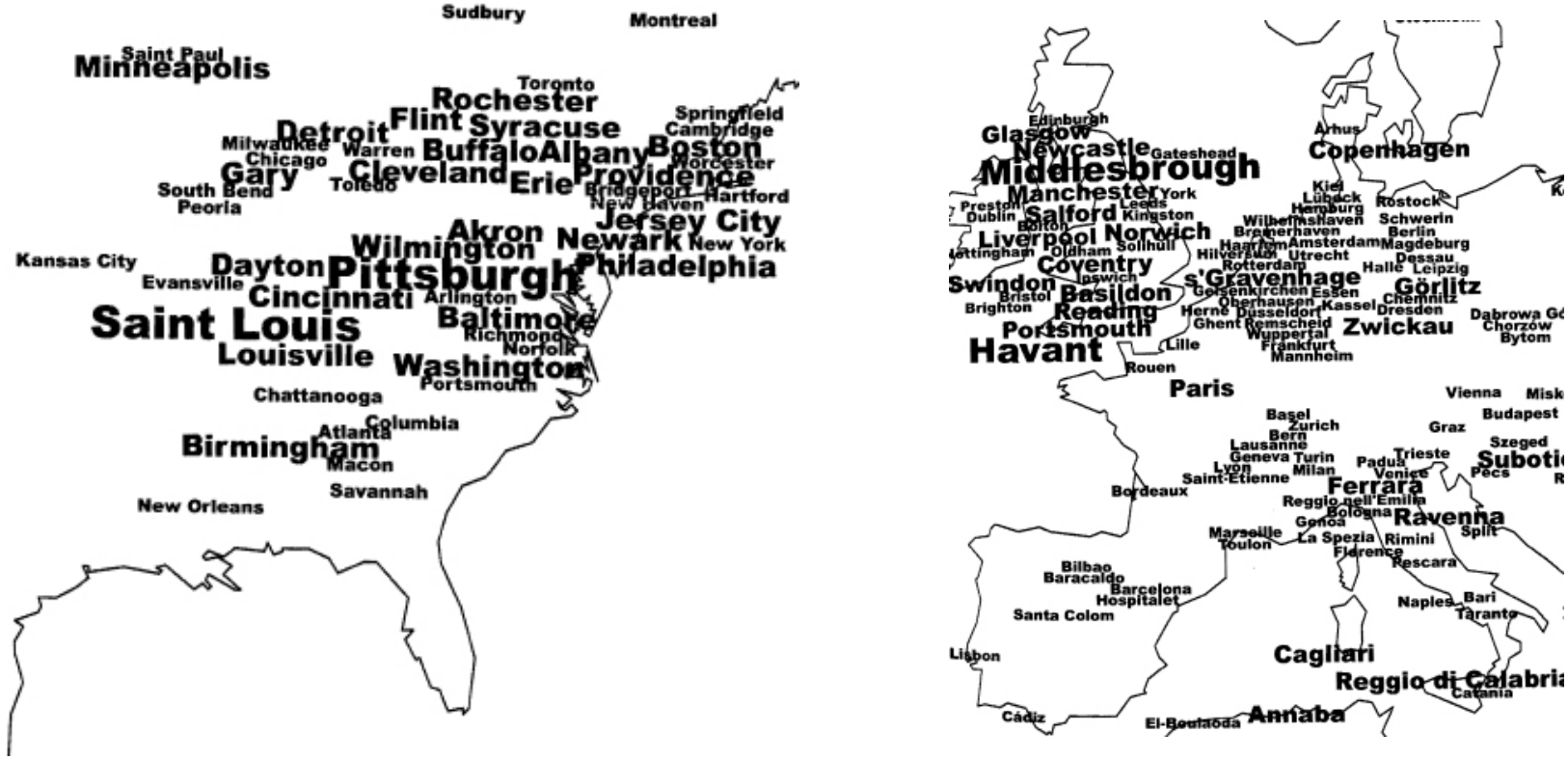


Figure 1.1 | Shrinking Cities
These are the cities across the world that are facing global shrinkage. The size of the text corresponds to the percentage of the population decline.
(Images from Reiniets)

SHRINKING cities

While the world's population is exponentially rising and cities are rapidly densifying there is also a flip side to the story. Huge territories of the developed world are falling back into natural ruin and decay, mainly due to the process of suburbanization, sprawl, and general disregard. As people abandon previous settlements and regions those places start to regain their connection back to nature away from the scripts of man-made processes. "The territory is a 'built-up entity' that, during its 'becoming' so, experienced a long phase of abandonment due to a gradual weakening of its relations with men, with an obvious fall in maintenance and use, with degradation that usually took on particular gradual features. The slow loss of integritas of the relationship between city and territory marks a historical process of great cultural significance with regard to relational dynamics between men and the built-up entity." (Maciocco, 2008, p. 14)

These regions which are trying to recapture the ecological practices of shrinking city dynamics will be an important element of the future urban landscape. These mainly include the post industrial cities of the Northeastern United States as well as the older industrial areas of the United Kingdom and the Rhine-Ruhr valley in mainland Europe. As populations in these cities fall below the capacity and scope of the city, they must rearrange their metropolitan boundaries and shrink accordingly to form tighter greener networks. These smaller cities make ideal locations for new decentralized energy systems that would provide jobs to these cities as well as resource resilience to the region at large. (Tumber, 2009) As we move further into the 21st century, small shrinking cities have a key role to play in the overall sustainability of the planet.

SUPER Density

"While some say the world is flat, supercities are rising – vast, intensely urban hubs will radically redefine the world's future macroeconomic and cultural landscape. Most of the world's population right now lives and works in cities. Many more will. It's critical to gain a truer understanding of what's happening: the rise of supercities is the defining megatrend of the 21st century." - 192021.org

The cities of China, India and other parts of Asia as well as the older and newer powerhouses of the West are rapidly becoming super dense nodes of human activity. Hong Kong is a prominent example of the super dense rapidly interconnected network city. It is at the heart of westernized modern China and is a city so tightly rooted to its island locale and to the global machine of flows. The pace and intense density of development leaves no room for a planned grid development but is more of a plug in hybrid development where thin skyscrapers fit in between the constant rubble of new construction. The rapid development of the city core has also brought about sprawling developments around the edge which are now growing just as quickly. Nearby Shenzen is the now booming Special Economic Zone that has received the spillover boom from Hong Kong and is rapidly developing infrastructure to keep up, including a massive new airport. (Gutierrez & Portefaix, 2000) These are emblematic of the cities of super density.

There are a wide variety of urban conditions across the world. The older post-industrial cities are planning on tearing down highways, while the new rising industrial cities are constructing ring roads en masse. The urban fabric of different regions dramatically varies but one of the constants is the flow and exchange of information, ideas, and people. These elements combine to form the identity and a template of experience for the people of a city.

A False Identity?

How do people experience these different urban dwelling conditions? According to Joseph Pine, people want authentic experiences now. We started out with commodities and made them into goods, but then the goods became commodities. These then become services through customization but then they also became commodities. Now we are in an era where services are becoming customized into experiences, and this uniqueness is what people are really craving. He then goes on to talk about this issue in the context of places such as Disney World and compares and contrasts this with the Netherlands, specifically about how the whole country's theme is water-based living. (Pine, 2004) Themes on a city scale might work differently than from themed based design of a building. When the theme expands to a

certain reach, perhaps it is actually an extension of the authentic identity of the place. Either way, it is difficult to define the blurred boundary between authentic identity and themed place. "Theming leads to the dissolution of traditionally established categories, with media, marketing, and architecture combined into one interlinked body. The boundaries between fictional narrative and real space dissolve while de-centering the notion of the architectural object as closed organization." (Klingmann, 2007, p. 204) Are themed environments innately attractive, and where does the authentic experience begin?

Figure 1.2 | Cities of False Identity?
(left to right) Las Vegas, Sunway Lagoon in Malaysia, and Shenzen, China are three themed places that have been permeated by globalization.
(Images from flickr.com users: pbo31, nadi0, and borix1)

There is an explosion of themed places across the world, and increasingly they are blending together homogenously. These are resorts, theme parks, and complete cities that are dedicated to consumerism. Places such as Disneyland, Sunway Lagoon in Kuala Lumpur, the city of Las Vegas, and numerous others destinations are about an exhilarating theme. They attract huge crowds to sealed destinations that are protected from the wilderness around them, and instead present a themed 'imagineered' consumerist landscape. These almost artificial places are dizzying in their scale and speed of building, especially throughout the growing power of Asian cities. For example Shenzen, China is rapidly trying to implement these themed environments and has created parks that feature monuments and famous places from around the world, while eschewing the original identity of its place. (Moore R.) The rapid rate of the development means that these cities

are also becoming increasingly homogenous places in which an almost identical experience can be had in any point on the globe. Although they won't be comprehensively homogenous, this movement towards ubiquity is a huge cause for concern.

"Homogeneous landscapes — whether linguistic, cultural, biological, or genetic — are brittle and prone to failure. We are now getting to this important understanding that nature and culture are one thing." (Seed Magazine, 2008) In nature, biological diversity is necessary as it promotes the resilience of a particularly biome or ecosystem. The greater the diversity of fauna and flora each with separate niches creates a rich web of organisms that is more likely to withstand destruction. Homogenous regions are more prone to viral infections and other sorts of natural disasters that can easily spread through a few species. Applying this same idea of biological resilience to our human culture, we realize that they are one and the same thing. Cities need to be a product of their local identity to develop resilience and long term sustainability.

Forming order in flows

Now that the "world is flat" and we are on an ever increasing pathway towards globalization, how is place and identity maintained? Ideas transplanted from one region to another can take out and destroy the local identity and culture of a place. An ecological analogy is when cane toads were introduced to Australia in order to wipe out cane beetles resulted in the widespread proliferation of the toads. There were no natural predators for them and they overshadowed many of the local fauna. Global transplantation of ideas and practices can be dangerous if not tempered with ecological sensitivity.

American architectural theorist Michael Speaks challenges this idea that globalization simply transforms difference into sameness. In the increasingly global network flow model, the idea of a contemporary city's identity is not adequate. Instead network theorists use nodal fitness analysis to look at the constant flux of competition between cities and regions. A city's identity is a dynamic rather than static equilibrium. Instead of developing a top down marketing strategy the identity is constructed via a ground up approach. Communities of

people are empowered and encouraged to explore their region, this gives rise to the identity of the place. (Primas, 2008, p. 191) Returning back to the example of Shenzen, the rapid development has not quashed human potentiality or ingenuity completely. Innate human sensibilities and creativity resist imposed homogeneity. For example, Shenzen was just added to the UNESCO Creative City network as a "City of Design". (UNESCO, 2009) Focusing on the unique human assets that are cultivated as a result of local identity should be a key asset for healthy urban planning.

"The term genius loci could hardly be a more fruitless and irrelevant means of describing a city. Cities become more specific rather than more generic under the pressure of globalization and as a consequence of ageing. In this respect they are a bit like human beings. You become more 'you' the older you get: more 'you' in the way you move, speak and look, more 'you' in your obsessions, failures and successes." – Jacques Herzog (la Biennale di Venezia, p. 70) Herzog makes an interesting analogy and point about the identity of cities, but it is one that is not totally true. We accumulate a wide variety of external influences throughout our life and it is true that we are becoming more of ourselves, but this is an identity fundamentally tied to the environment in which we reside and move. There is no separation between our internal body and external environmental influences. There is constant physical, chemical, genetic, and invisible exchange throughout our body. Our identity is shaped by where we are and what we do, but this is always in reaction to our surroundings. There is however an underlying essence to our person, perhaps the backbone of our genetic code and this is what defines what we become for the most part. In returning the city analogy, this underlying code or identity is the genius loci of place. Each city has a particular feeling and categorization, one that is sometimes easier found in some places than others. Now however the exchanges of cities and people is global and not limited to an arbitrary physical region around the city, but rather expands broadly outward.

In this globalized world there seems to be a spectrum of views about the importance of preserving and nurturing identity. Leon Krier, the father of the New Urbanism movement, maintains that we should be moving back towards smaller living and that this will lead to and work

by the cultivation of local identity. Rem Koolhaas on the other hand, suggests that the market forces of capitalism dominate all and that there is no need for discourse on the city. For Koolhaas the city is increasingly determined by its network flows and with this acceleration, the city itself is of a generic variety, a point on the world network. (Ingersoll, 2006, p. 17)

The notion of the generic city as the archetype of our progress provides a false picture. Although capitalistic forces are extremely strong and have "flattened the world" what overrides this is the importance of humanity. The importance of humanity is about the world we desire, not the world that is shaped by flows. With a humanistic lens, what is vital is how to form a sustainable symbiotic relationship between the natural environment and human beings. This is already beginning to happen, as many societies are starting rediscover their city's connection to nature. In this movement towards a sustainable future, we will be moving towards the local and rediscovering many lost touches of unique identity. At the same time we cannot "unflatten the world" we have already seen it and can communicate with the furthest corner. The global networks that have been created are here to stay and still be at the forefront of our world. They will be the tool and medium of crafting our cities individual global niches rather than the primary driver of homogenization. The critical nodes of this global transaction are the ports. Understanding city's points of exchange are essential for speculating on future scenarios of global development.

Figure 1.3 | Macrocorners of the air
The new nodes of air travel have reshaped the image of the world. They have flattened and stretched in new ways and understanding them will be vital for speculating on future scenarios of global development. *(Diagram from Forum Barcelona 2004, 2004)*

C / A CITY'S PORTS

"Airports will shape business location and urban development in the 21st century as much as highways did in the 20th century, railroads in the 19th and seaports in the 18th" (Kasarda, 2009)

Historically as societies increased exchange and transactions between each other, unique global transportation typologies emerged, namely trade routes and ports. These were the new frontiers of exploration and these patchwork settlements along trade ways morphed into major cities. Through the exchange of goods and services cities and societies acquired wealth, power, and influence and this in turn increased the development of that city. Today most of the world's greatest cities are the ones that developed on shipping routes and have maintained their dominant position by investing their wealth from exchange back into the city. These port cities were mainly along ocean coasts, major rivers, and other waterways as this was the primary means of transportation before the advent of the railroad and roadways.

Water shipping as a major city destination

The port cities that develop along waterways are designed to match the rhythm and flows of the water. Just as natural forces can articulate the design of cities, the pressures of exchange and human transactions also have a dramatic impact on the design of cities and specifically the character of the portscape or the point of exchange between the city and the world. The

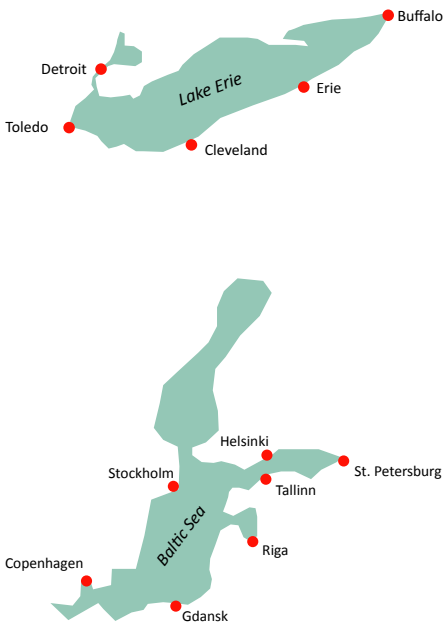


Figure 1.4 | Port Cities
Instead of grouping cities by state or national boundaries if they are attached by their natural sea ports then it forms a new understanding of linkages that might not have been apparent before.

earliest water ports were simply jettys or small docks that however allowed for a fertile exchange of goods and ideas. Over time they evolved into great shipping ports which became key hubs of activity in the city. The port was one of the top urban destinations at the time, it was the place where one could connect with the world. Even today many of the world class cities have a extensively developed region of the city around the water ports. Cities are redeveloping their ports as well to become urban centers of human exchange. The Dublin Docklands are one such development for the 21st century, they are a destination along the historic periphery but has now become the financial and cultural center of the city. (Moore N. , 2009) The London Docklands for example are some of the prime areas of the city for both business development and housing. They have an interesting political and urban history but today the port emerges as an iconic point in the city and on the globe. Perhaps the city most dominated by transitory water ports is Hong Kong. It is a city of shipping containers and transit maps all intertwined into one "fluid machine." (Gutierrez & Portefaix, 2000) The whole city adapts to the speed of the ports and becomes a complete urban portscape. Of course in many cities the water ports became less used by passengers as railways and roadways accumulated.

Growth of railroads and roads and the dissolution of the port as a city destination

In the heyday of the railroads, Theophile Gautier proclaimed: "These cathedrals of the new humanity are the meeting points of nations, the center where all converges, the nucleus of the huge stars whose iron rays stretch out to the ends of the earth." (Pascoe, 2001, p. 113)

Figure 1.5 | Ports no longer function as destinations
Railroad stations such as Penn Station in New York City do not seem to function as urban destinations even though they are directly in the heart of the city. Their design seems to be purely about flow and do not offer much respite. Still they do function more as destinations in comparison to airports, because of their easy access and availability to pedestrians.

The distant reach of the railroads are an important point that Gautier makes, but more important is that the nodes along the railway were the vital meeting points of humanity. Train stations were designed for people to converse to mingle and to really experience the excitement of cities through the transactions and flows of people. They brought a great diversity of people to the small towns and stops along the way who were otherwise left disconnected from the broader world. The railroads formed the major transportation ports of America throughout much of its developing history. They not only connected distant parts of the American landscape but they changed the speed at which it was viewed. As people become customized to trains their blurring of the landscape through the window was an ordinary event, people were desensitized to speed. The next great leap in turning extreme experiences into mundane routine was the acclimation of people to global air travel across multiple time zones. (Bissell, 2009, p. 43)

Overtime railroads began to lose their importance for transportation in competition with airplanes and the new nodes of global meeting were airports. They continue to play a smaller role today, but still have major roles in Europe and Asia. The railroad station destinations are being redeveloped as critical urban injections similar to the new docklands. In Berlin, “if it were not generally believed that a railway station district is an essential part of a railway station intended to function as an urban focus, the development planned for the area around the main railway station could be dispensed with.” (Jaeger, 2009) Railroad station districts are quickly becoming the urban rallying node for activat-

ing the city, but they are not the critically centers of global connections. Airports are the primary places of globalized connections and therefore understanding their role in developing the urban fabric of the local city is vital.

The Rise of Flight

"Airports are highly appealing places. Gateways to the big wide world, they represent international movement and inspire travel. Because of their size and the range of their services, airports often seem to be a city within a city." – Amazon.com description for Airport Design by daab (Amazon.com, 2009)

Airports are an architectural type that has had roughly a 100 year history. Over a century's span it evolved out of the convergence of commercial, governmental, military and private sectors. (Fuller & Harley, Aviopolis, 2004, p. 52) In the early years of flight, the building and technology evolved together, both unabashedly uncertain about where they were heading. "The integrated flows of aviation were not always so seamless. Flying was once the adventure of the reckless and the dashing." (Fuller, 2003) After the initially rocky days of dangerous planes the notion of flying increasingly permeated multiple tiers of society. However, it was not until the latter end of the 20th century that flying truly became a mass-market phenomenon. Throughout this century of innovation and growth, the technology of flight influenced the design of airport terminals. Advances in jet technology would result in wider aircraft that would then have to be accommodated at the terminal gate, one among countless other examples of this parallel aviation evolution. One of the key world airports that has evolved both with its city and with the contemporary airport design paradigms was Idlewild or John F. Kennedy International Airport in New York. In 1960 Time magazine had a feature about the peripheral connections that lead to the development of "airport cities" and they then proclaimed that Idlewild was the mother of all airport cities. (Gordon, 2004, p. 186) Due to their scale and connective reach, airports are critical elements that define and drive the urban landscape.

D/ AIRPORTSCAPES

Both cities and airports grow and develop identity as a network of roots and routes. This contrasting classification method was described by the French philosopher Gilles Deluze. On the one hand identity is established through the roots of a region, its inherent identity. However the multiple layers of routes of human, economic, and cultural transportation and transactions are also important for shaping identity. Investigating both the historic roots and dynamic routes is described as rhizomatic, analogous to a fungus or bramble's network like growth pattern. (Crang, 1998, p. 172) Cities have grown rhizomatically, they have been connecting at ever broadening scales of transaction, the latest evolution of which has been the internet. The airport has remained the primary physical connection. Once cities have to include an airport the entire dynamic of the region changes; it is no longer about local connections but rather integration into a global network. As Fuller and Harley parlay in their quote, it is now an integration of a plethora of factors, mostly invisible to the local forces. Yet these connections will transform the local conditions more drastically than anything before them. In the early days of airports they were built fairly small and closely integrated into the city. However as the jet age took flight and airports became the labyrinth monsters of today, they tended to move further out of the city. In the outskirts the infrastructure associated with the city and the big engines of globalization have created unappetizing interstitial corridors. "Infrastructure is ubiquitous throughout all urbanized landscapes. Cities, regardless of location or size, require a variety of infrastructural systems in order to function. Waste landscapes of infrastructure (LINs) include the landscape surfaces associated with these systems, including easements, setbacks, and the rights-of-way associated with transportation (such as highway corridors and interchanges), electric transmissions, oil and gas pipelines, waterways, and railways. As the technology for communications, energy, and transportation evolve or change, these LINs expand and contract, which inevitably results in jurisdiction transfers from public to private uses and vice versa." (Berger, 2006, p. 170) To reduce the creation of these waste scapes, it will be important to concentrate development back towards central previously developed zones. As we look into the future, the economic impetus driving airport development is looking to centralize the airport, a new paradigm of development. (Kasarda, 2009)

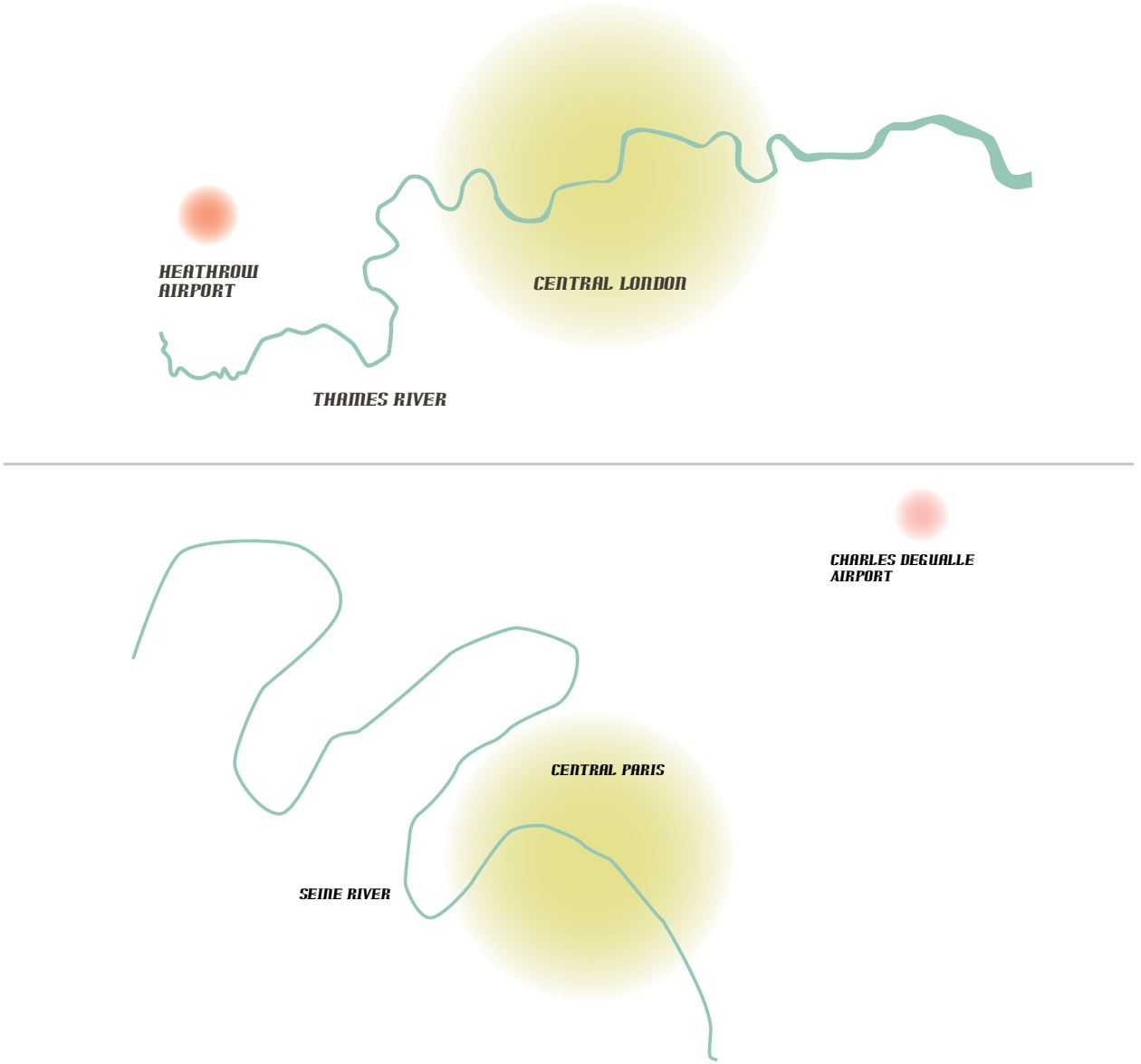


Figure 1.6 | London & Paris Airports
The airport is located distantly from the center of the city

Of course the airport at the center of the city was the original models that visionaries such as Le Corbusier projected. Over time his beliefs and assumptions changed and he became more open to stretching out airports to the peripheries of the city. When Paul Andreu was working on designing Charles de Gaulle Airport for Paris he chose a plain patch of land 20 miles north of the city in a field named Roissy-en-France. (Pascoe, 2001, p. 145) This peripheral placement of the airport has been standard practice throughout the world and has led to the development of many drastic urban transformations. To connect the airport to the city required a massive level of arterial infrastructure which in turn resulted in massive land shifting development.

From landform to metaform

"The airport, any airport, suggests the meeting point of theories of time and of space, of schedules and mappings. Its location often results from decisions taken long ago in relation to the geographical and political entities whose existence owes nothing to air travel but rather to established patterns of existence and modes of travel – to say nothing of features of the local terrain." (Rosler, 1998, p. 58)

In terms of discussing airport landscapes, the terraforming of the land is still an important topic, but at the same time the metaform of the airport encompassing much broader reaches (social, cultural, economic, and natural landscapes) has become of greater prominence. Airport's impact on the landscape was about the physical dimensions it required, the massive scale of its runways and facilities. The process of flying allowed one to begin to visualize these tremendous movements of earth from an appreciable vantage point. These new allowances are what pushed the American artist, Robert Smithson into developing his land art. Because of his large scale land art Smithson was invited to envision a large scale earthwork art display for Dulles Forth Worth Airport, for which he launched a competition among various collaborators. Smithson's own proposal was a series of large concrete triangles that extended as large as the land allowed. This freedom of scale and new dimension of perception is what lead Smithson to produce his most famous work, the spiral jetty. (Pascoe, 2001, p. 94)

Figure 1.7 | Manmade and Natural Art
(top) Robert Smithson's Spiral Jetty is his most famous work and is emblamatic of airplanes ability to give us new perspectives of art *(image from robertsmithson.com)*

(bottom) Aerial of waterway on a flight from Orlando, FL to Albany, NY.

Dulles Forth Worth was one of the earlier examples of landform around the airport. Some of the newer airports have transformed the ground at much larger scales. Numerous arirport are being built on extended man made islands, the first of which was Kansai, Japan. Then there is the large island of Chep Lap Kok in Hong Kong as well as numerous other land to sea projections of airports. The last new airport built in America was Denver in 1995 and the amount of land it squats on is enormous. It covers an aera of 53 sq miles that is twice the size of Manhattan, and is 400 times the size of Huffman Prarie, the small area of land in Dayton, Ohio which the Wright brothers used as a makeshift airport. (Pearman, 2004, p. 198)

4th generation of airport building

Airports are a truly magnificent achievement of mankind. They are a structure that tightly integrates land and air with function and form. Initially they were reserved only for a small minority and exuded a special luxury of travel. However, modern airports have become human processing machines. For the most part it is no longer a splendid journey but rather an unsettling process to journey by air. With long queues at both the airport and on the airline, traveler's senses are distorted; mainly due to the international nature of flight and immense scales of movement.

Robert Smithson's 1966 sculpture, 'Terminal' was emblematic of airport life, the crystalline forms of serial repetitiveness represent, "a realization of terminal culture; a site where destinations are always approached, never achieved." (Pascoe, 2001, p. 199)

Figure 1.8 | "Terminal"
Another one of Robert Smithson's airport related pieces. This is a crystalline steel structure that is supposed to represent the repetivie nature of terminal culture. *(image from robertsmithson.com)*

Currently we are in the 4th generation of airport building. (Edwards, 2005, p. xii) The early days of flying were about a gentlemanly recreation and the airports reflected this pursuit. (Sudjic, 1993, p. 148) However, even by the 1960s the mass market air travel industry became apparently visible; with this came about an unsettling global sense of sameness. (Gordon, 2004, p. 214) Airports are the gateways to cities, yet many airports seemed to have forgotten that. Instead, they mostly speak to an ubiquitous global culture rather than to the cities which they serve. In the early days of airports, this futuristic structure opened up the world to people. It was to be the gateway to the new globalism where people and nation states intertwined. (Fuller & Harley, Aviopolis, 2004, p. 80) The promised premise of airports was that they connected regions far apart from each other, allowing for a flow of people, values, culture, businesses, and economics. It resulted in a global urbanism boom but airports had little to do with their home location. (Munoz, 2005) Over a short time there emerged an international form for airports and this trend has continued, resulting in airports becoming the symbol and vehicle of globalism. It is the dissolution of national boundaries and the homogenization of culture and people. Airports have become environments of generic qualities where architectural features and services afford no indication of the city they inhabit. (Wood, 2003) Perhaps the ultimate extension of this process is the Flyport modular airport; a city can now create an instant-gateway. (flyport development, 2006) With this one-size-fits-all-cities-airport passengers will be both temporally and spatially disoriented. Infrastructure is now prepackaged, simply waiting to be decontexualized, this was the notion behind Robert Smithson's famous Spiral Jetty. (Ingersoll, 2006, p. 123) Travelling two thousand miles to reach a duplicate airport is disconcerting.

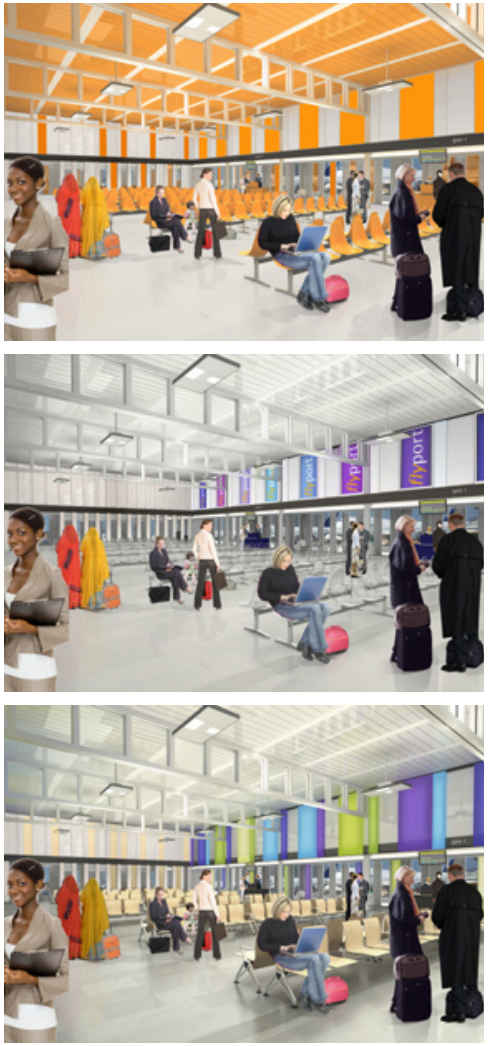


Figure 1.9 | Flyport Modular Airport
(top to bottom) Low, Medium, and High level of trim details for flyport modular airports. Although well intentioned generic airports will serve to accelerate homogenization and create problems in the future. *(images from flyport.info)*

Rem Koolhaas belies in his "Generic City" laissez-faire globalization will lead to the destabilization of both space and time. (Ingersoll, 2006, p. 17) It is now pure economics that seems to be dictating design. The problem is that this often ignores human scale design, for both passengers and employees and other airport users. This is no longer the golden jet age era, people do not journey to airports (or are forbidden) for a leisurely afternoon of plane spotting. Somehow we've made the experience of flying mundane and increasingly frustrating. The public security checks, the blaring loudspeaker, the missed connections, the lost luggage have created an unfriendly atmosphere. People are no longer excited or comforted during air travel they simply just pass through (Gordon, 2004, p. 4). The quest for efficiency has led to a dehumanizing quality and has produced sterile, inhabitable terminals. They have become an 'architecture of nowhere'. (Gottdiener, 2001, p. 57)

Yet airports have transcended the non-place moniker Marc Auge has applied. As Andrew Wood puts it, airports are an omnitopia, a convergence of all places. With the fluid process of rapid globalization, omnitopic mobile places have emerged. Wood argues that airports are not just another non-place but are a new type of place, one which is characterized by continual movement, atomized interactions, and generic environments. However, there is no respite, even if travelers are lounging in the VIP suite, or shopping at the world's finest stores, they are in transition and must make sure that they do not miss their flight. (Wood, 2003) Part of the reason that this is a problem and a challenge is the model of flying today.

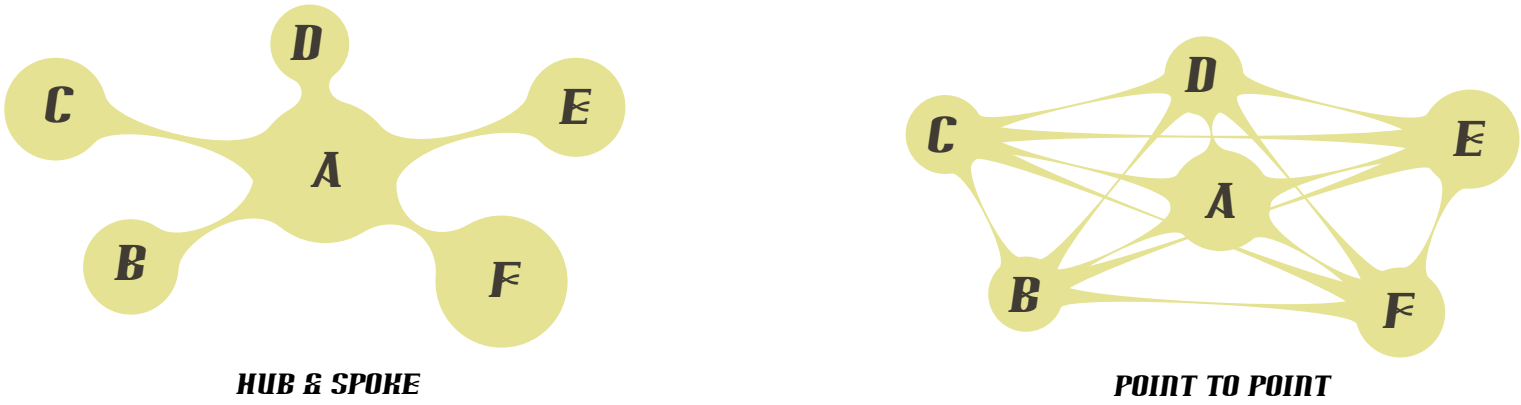


Figure 1.10 | Hub & Spoke vs. Point to Point
The majority of airline models work on a hub & spoke system where large central airports collect a variety of flights from smaller regional centers before redistributing them to their final destinations. It is more effective economically than a point to point system, but it adds a greater amount of miles traveled per passenger.

Hub & Spoke

The predominant model for air transportation today is the hub and spoke pattern of flight. (Derudder, Devriendt, & Witlox, 2007) It is a system that leads to many frustrations, as highlighted in Arthur Hailey's 1968 novel, 'Airport' an irate travel quips "You've the effrontery to tell me I must go to Kansas City to get to New Orleans. You people are rewriting geography! You're mad with power." (Rosler, 1998) There is no precise definition of a hub airport but it is generally understood as an airport that is a central cog in a radial network and its flights are dominated by one carrier. (Button, Lall, Stough, & Trice, 1999) The modern airline hub network has strongly affected airlines and their choices for a home hub city. Furthermore, the formation of a hub has had huge implications for the city, but these ramifications have not seemed to be discussed in an anthropological context. The predominant considerations that went into driving the hub and spoke network were costs for carriers and consumer benefits for passengers. They did not look at the environmental damage that is accelerated through this model of flying. Also it does not consider the psychological ramifications of forcing people to take roundabout routes with a

Most important hubs by Absolute Handling

Most important hubs by Relative Handling

Figure 1.11 | Hub Airports
(The two maps show the worlds important hubs. The top map is simply in terms of the absolute volume of air traffic whereas the bottom map idisplays the relative hubness of that airport as a function of its total volume. *(Diagrams from Derudder, Devriendt and Witlox)*

higher propensity for delays. A city cannot ignore its citizens for the whims of the global networks. Even though a particular city might be considered a major hub for a certain airline and this could have serious ramifications in the global interconnected world, it must be dealt with what is best for the citizens of that city or region. For the most part, the major hub airports seemed to have forgotten their city when they are planning the next stages of their development. For example at Heathrow in London, the government approved a third runway even though there was a huge push of citizens against the expansion. This action serves to further separate the population from the city networks, not a sustainable way of planning. An airport exists to serve its city.

What are the dominant hub airports and what is the condition of the cities that house them? One of the recent trends identified by Manual

Castells regarding Saskia Sassen's global cities, is the fact that the interrelationships between the cities is increasing in importance while the cities' relationship with their surrounding landscape is losing significance. (Derudder, Devriendt, & Witlox, 2007, p. 307) The majority of passengers at a hub airport are those for whom that airport is not their final destination but just a node on a global trek. (Button, Lall, Stough, & Trice, 1999, p. 53) One of the problems with having to fly through hubs is that there is increase in time traveled, distance traversed, an increase in potential delays, and an increase in carbon emissions. On the other hand it gives (forces) people the chance to see a city they would not have planned on visiting. The problem is that they are not actually visitng the city but just the enclosed airport environment. There is a huge opportunity for the city to use the airport as a marketing canvas to draw people to visit their city, either on that visit or perhaps their next trip. Most hub airports however just cater to facilitating the massive flow of people through them without giving much thought to the potential alluring of those passengers into their city.

So which airports exactly are the hubs? There are different measures of 'hubness' but they all revolve around the transitory passengers. When quantifying hub airports as a function of their volume of transitory passengers it is necessary to separate them according to destination. This way it will be possible to examine hubs as domestic or international, and other features of how they function in these global networks. In terms of absolute numbers of passengers using an airport as a switching point, Atlanta, GA dominates while Chicago, IL comes second, according to the 2001 data and at a typical hub more than 50% of the passengers are transitory. (Gottdiener, 2001, p. 168) The next three cities that make it into the top five hubs are Frankfurt, Dallas, TX, and London. (Derudder, Devriendt, & Witlox, 2007, p. 313) This is simply a measure of the absolute number of passengers transitioning through the airport and does not reflect and regional or spatial biases which are essential to understanding the implications of this data. So Atlanta is the number one airport in terms of passenger connections and provides a wide thoroughfare for over 89 million passengers, making it one of the most critical nodes for air traffic. Although it primarily serves domestic traffic, any problems at Atlanta would register across the world because the U.S. and European air routes are still the dominant controllers of the world air traffic flow. Atlanta however is not a top international destination and does not receive much

attention as a tourist city even within the United States. In terms of international tourism to the city, it ranked 105 in a 2007 Euromonitor ranking, with only 477,000 visitors. London took the number spot with over 15 million international visitors. (Bremner, 2007) The airport is a huge opportunity for Atlanta to use for branding and selling their city, I have passed through it a couple of times and I still do not know much at all about the history or unique qualities of Atlanta. The terminal environment is designed to simply process large global flows of people quickly and efficiently to their destination. The corridors are bland and the food court is full of global franchises. The airport communicates to the passenger that Atlanta is a bland city, without an identity or brand. Perhaps the most memorable aspect of the airport is

Figure 1.12 | Generic Atlanta Hartsfield
Atlanta has the highest passenger volume of any airport with nearly 90 million people passing through its bland terminal space, the majority of whom are just transitory passengers. The entire airport is designed for flow and provides almost no opportunities for stopping. *(Photographs by: Sharat Agadi)*

the people mover train that connects the four separated terminals. It seems that there is no reason to stop and come back to visit the city on a future trip, one simply just passes through.

Derudder et al, in their investigation also developed different models of ascertaining the 'hubness' of a particular airport. Instead of calculating the absolute number of passenger transitions, they developed a model known as relative handling, which measures the ratio of pas-

sengers using that airport as an intermediate transition compared to the total number of passengers. With this measure, the top airport is Charlotte, NC, followed by Cincinnati, KY, St. Louis, MO, Pittsburgh, PA, and then Atlanta, GA. In other regions of the world similar trends become apparent, the big city airports drop down as the hub tier of airport rises to the top. Amsterdam and Frankfurt remain at the top with either absolute or relative handling, but London and Paris exchange spots with Zurich and Copenhagen when looking at absolute traffic versus relative traffic. (Derudder, Devriendt, & Witlox, 2007) This relation seems to suggest that airports which are used just as hubs have an opportunity to increase the tourism to their cities because although they are not in the top tier of world destinations, they still have a heavy amount of traffic traveling through their country.

Airport as Travel Archetype

We all travel for highly specialized reasons, but at the same time there is a general human nature for the interest to travel. It is about seeing difference and experiencing it wholly. In our modern times, the airport is the predominant physical connection between global places and people. It symbolizes and stands for departures and arrivals from one land to another. The airport is a huge beast, its arms and tentacles claw out around the world and throughout the city where it slumbers. Its presence is felt beyond its immediate surroundings and vicinity. One of the many tools the airport employs for spreading its wings is advertising. Advertising is a continual and powerful force in making and altering city space.

For example advertising throughout the city might be used to show distant destinations and “dream vacations” that might captivate a tired citizen to seek respite in a far away land. This advertisement is usually tied either to a particular airline, airport or in this case both. Milan, American Airlines, and JFK are all entangled into one enticing package deal. Billboards, signs on vehicles, digital messages and a myriad of new forms of advertisement have radically taken over and restructured our vision of public space and our image of the city. It has a myriad of effects from influencing purchasing behavior, to finding something new, all the way to causing frustration. Additionally it can also make

	Top City		International Hub		Largest Hub
1	London		London (Heathrow)		Atlanta
2	Bangkok		Paris		Chicago
3	Paris		Amsterdam		London (Hwr)
4	Singapore		Frankfurt		Tokyo (Hnd)
5	Hong Kong		Hong Kong		Los Angeles
6	New York		Singapore		Paris
7	Dubai		Tokyo		Dallas
8	Rome		Dubai		Frankfurt
9	Seoul		Bangkok		Beijing
10	Barcelona		London (Gatwick)		Madrid
11	Dublin		Seoul		Denver
12	Bahrain		Madrid		Amsterdam
13	Shanghai		Munich		New York (JFK)
14	Toronto		Dublin		Hong Kong
15	Kuala Lumpur		New York (JFK)		Las Vegas
16	Istanbul		London (Stansted)		Houston
17	Madrid		Taipei		Pheonix
18	Amsterdam		Zurich		Bangkok
19	Mecca		Milan		Singapore
20	Prague		Copenhagen		Orlando
21	Moscow		Rome		Newark
22	Beijing		Manchester		Detroit
23	Vienna		Vienna		San Francisco
24	Taipei		Brussels		Tokyo (Nar)
25	St. Petersburg		Toronto		London (Gat)
26	Cancun		Barcelona		Minneapolis
27	Macau		Los Angeles		Dubai
28	Venice		Kuala Lumpur		Munich
29	Warsaw		Mallorca		Miami
30	Mexico City		Miami		Charlotte

Figure 1.13 | World Class Cities vs. Busiest Airports
The top city column lists the top tourist destinations according to Euromonitor.com The middle column uses ACI statistics to display the top airports for International Traffic. Finally the third column also uses ACI statistics and ranks airports by the highest amount of traffic. Cities and airports that are colored have additional opportunities for expanding their reach because they are not cross listed. For example Frankfurt is the number 4 airport in international traffic but does not rank highly in city rankings.

Figure 1.14 | Airport advertised in the city
(left) In Manhattan the bus (transportation) combines American Airlines, with Milan, and JFK in a simple advertisement.
(right) On a Pondicherry, India street corner there is a small sign for British Airways, it was quite uncanny because of its global reach in remote areas

an unfamiliar place quite recognizable. It is what de Certeau describes as “the disquieting familiarity of the city”. (Cronin, 2006) This is related to the emergence of the so called global brand, driven by mega-corporations. No matter where one journeys, familiar icons and brands are discovered, such as an unassuming British Airways sign on a dilapidated Pondicherry street corner. Sigmund Freud describes this phenomenon as ‘the Uncanny’, “the sudden involuntary awareness of the appearance of the familiar in the unfamiliar.” (Pascoe, 2001, p. 220) The world is a broad place to discover, maybe the familiar signs are helpful. Or is it stupid to see the same brands across the world? What attracts people to different places and drives the process of tourism? How do people experience and evaluate their global treks?

2. TRAVEL & ANTHROPORTS = PEOPLE + PORTS

A / WHY DO PEOPLE TRAVEL?

Traveling seems to be an innately natural element of life today. Humans are traveling more than ever, covering greater distances than all of those who came before us. We are able to do this of course with all the new technology that has opened the world up to us. It is possible for us to reach any corner of the globe now, within a week's vacation or less. Numerous websites, publications, and dedicated companies are devoted to this industry of travel and promote it thoroughly. For example the New York Times has its own dedicated section on travel and recently just had a special feature on the top 44 places to visit in 2009. (The New York Times, 2009) Also this evidence of us wanting to learn more about the world can be seen through one of the greatest internet art successes of 2008, "Where the hell is Matt?" This online sensation which has over 18 million views is the journey of one man to 42 countries where he dances a goofy dance with people from that country. It was such as big sensation because it captured the hope of humanity and our ability to imagine a united, harmonious world.

Tourism or Imperialism?

"It might seem strange to classify something like tourism as an industry, since its products are experiences and images, not tangible consumer goods. Yet tourism has become the world's largest industry, surpassing petrol during the 1990s and employing one in nine jobs worldwide. Its product is literally the environment: cities, mountains, lakes, and beaches." (Ingersoll, 2006, p. 33) Many argue that the current model of tourism is actually the new imperialism. The majority of the world's tourists are from North America and Europe and just 20 countries account for 80 percent of all international travelers. Furthermore these tourist industries are based on short term profits. This imbalance creates a system where much of the money generated by tourism in the visited countries is actually sent back abroad. For example in Thailand of the 4 billion dollars generated annually through tourism, 60 percent leaves the country. (Mowforth & Munt, 2009, p. 54) There is something seriously wrong with this model of the worldwide transaction. Huge disparities and fluctuations that create im-

balances counteract the path towards a sustainable homeostasis.

New Models of Tourism

There are newly emerging models and markets of tourism that are less damaging to the destination and more productive for the individual. The most prominent among the new tourism modes is eco-tourism, quickly becoming a buzzword ecotourism encompasses many different ideas. Primarily it is about traveling to ecologically distressed areas to raise awareness and help them while traveling with as little of a footprint as possible. They usually provide direct financial support for conservation efforts and importantly they help preserve local culture. (Wikipedia contributors, 2009)

Other models of tourism that have grown recently are creative and service based tourism. Creative tourism is a branch of cultural tourism where tourists try to have an engaging and authentic experience through actively understanding the cultural features of a particular place. UNESCO is spurring this movement and along with this they are developing the Creative Cities Network. It is a network to help member cities communicate strategies for maintaining local heritage while adjusting to the flows of globalization. There are seven categories which cities can apply to: literature, film, music, craft and folk art, design, media arts, and gastronomy. (Wikipedia contributers, 2009) This is an incredible new initiative that is emblematic of new models of tourism. The branding strategy is developed through the existing faculties and energy of the city rather than artificially veneered on top later. Hopefully this will lead to a more meaningful exploration and cultivation of identity.

Research Methodology – Survey

To further understand these intertwined phenomena of travel, cities, and airports I conducted a web based survey which was taken by 107 people. The first question after the initial demographic collection was “what motivates you to travel?” The majority of responses were

about seeing new places, cultures, vacation and family. Traveling out of necessity or work did not have as big of an appearance probably because the majority of respondents are younger and not out in the workforce yet. The survey was created and distributed using surveymonkey.com. Using the collected data from this open ended question I used wordle.net to create a visual representation of the data, where frequently occurring words appear larger and vice versa. This allows for a more potent analysis of textual data. (Unless otherwise noted, all wordles remove common English words from their counts. Also all quotations from the survey are quoted as is with spelling and grammatical errors left. Q indicates the Question number and R indicates the respondent number for that particular question, R values are not standard across questions)

Figure 2.1 | Wordle from Survey Q4 - What motivates you to travel?
This wordle was created using wordle.net from all the respondents answers for this particular question. Words increase in size according to frequency. Seeing new places and experiencing new cultures seems to the be the major motivation for travel.

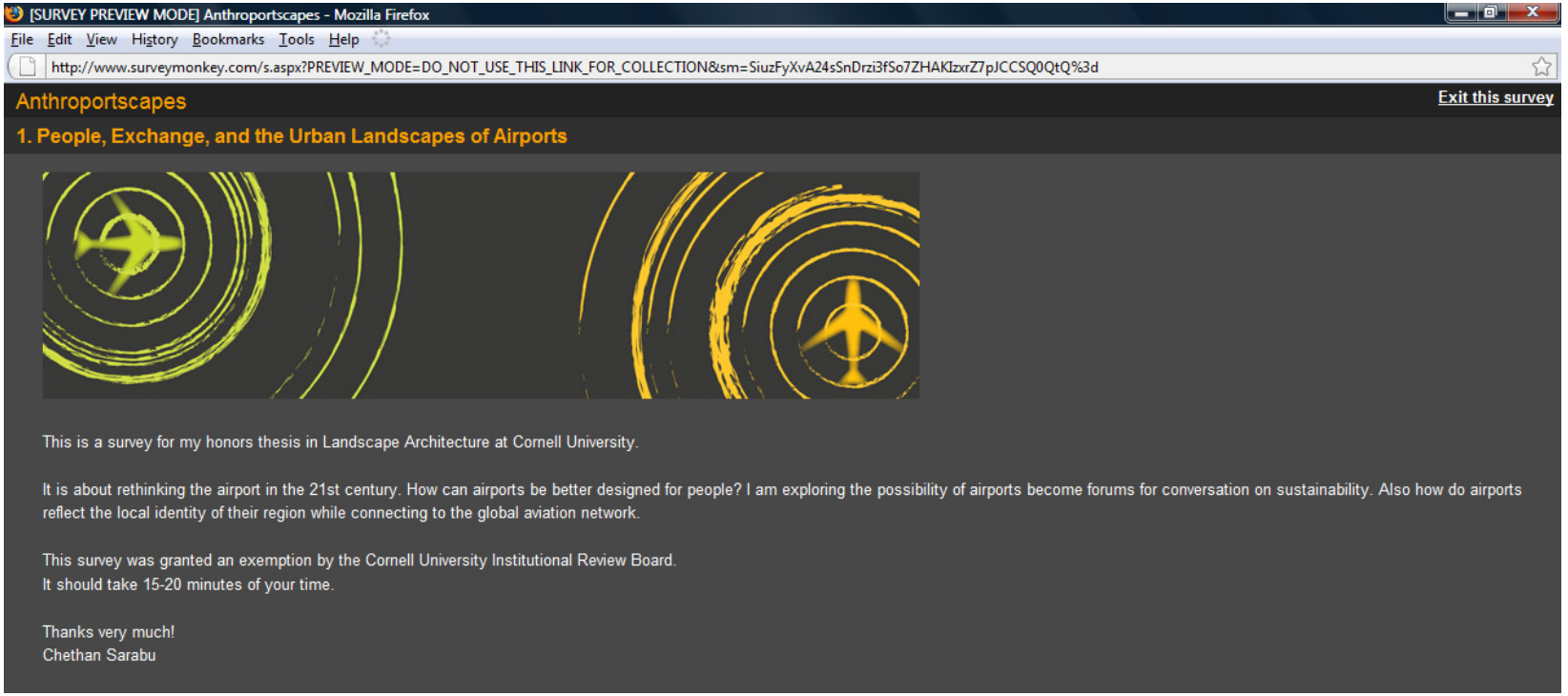
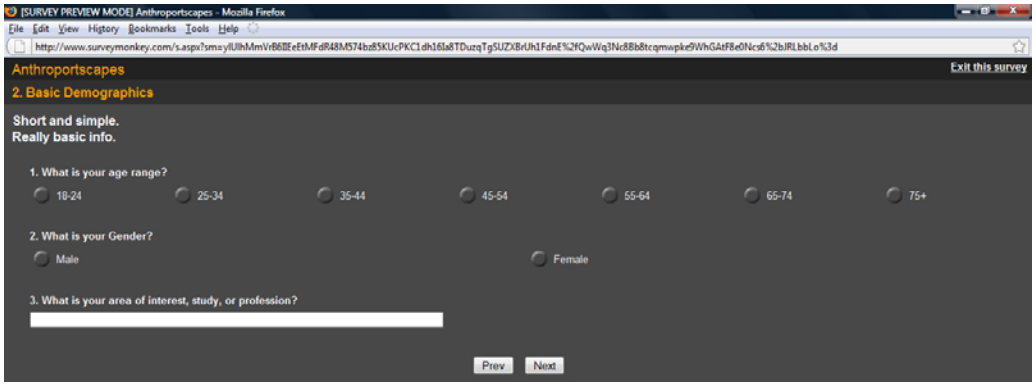
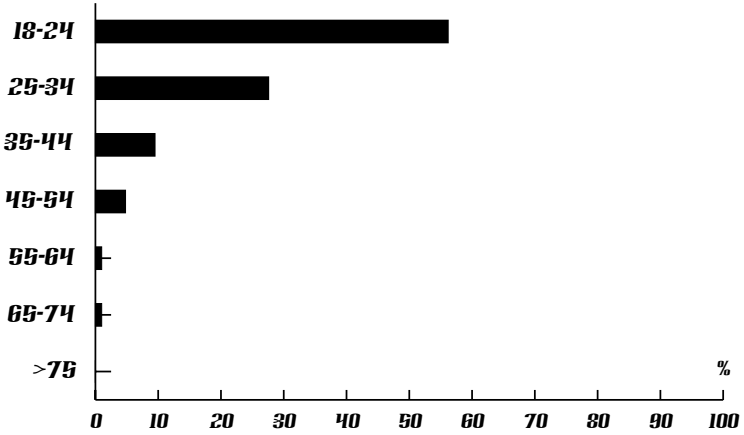


Figure 2.2 | Surveymonkey.com interace
The entire survey was done conducted through surveymonkey.com, this is an example screenshot of the introductor screen as viewed by the respondents.

The survey demographics collected, reveal some fairly large skews. Although the gender breakdown was approximately 50-50 (54.3% Male, 45.7% Female), the age of the respondents was heavily skewed to the 18-34 range (56.2% 18-24, 27.6% 25-34, 9.5% 35-44, 4.8% 45-54, 1.0% 55-64, 1.0% 65-74, 0% 75+). The biggest factor however was the area of interest or profession of those respondants, the overwhelming majority were in Landscape Architecture. This was a factor of who I could reach out with the survey, I emailed the link to the Landscape Architecture department, as well as the human computer interaction lab. Finally I sent it out to family and friends, but the majority seemed to reach the landscape architecture students. The following wordle displays this disparity.





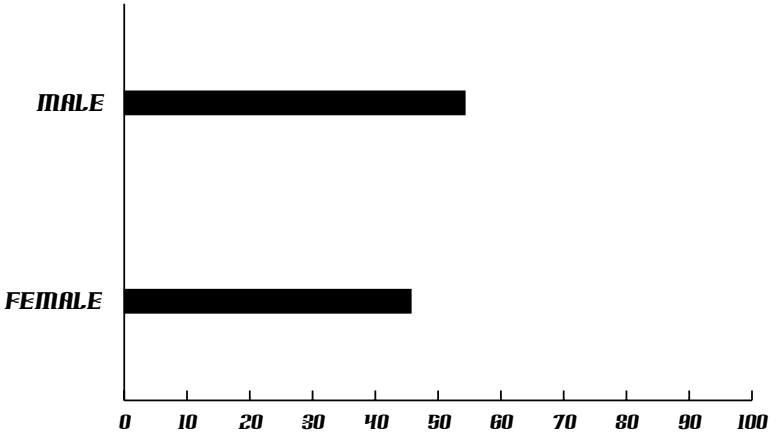


Figure 2.3 | Demographic breakdown
(top) view of demographic questions

(middle) Age and Gender breakdown of respondents

(bottom) Area of study, interest, or profession of respondents aggregated into a Wordle

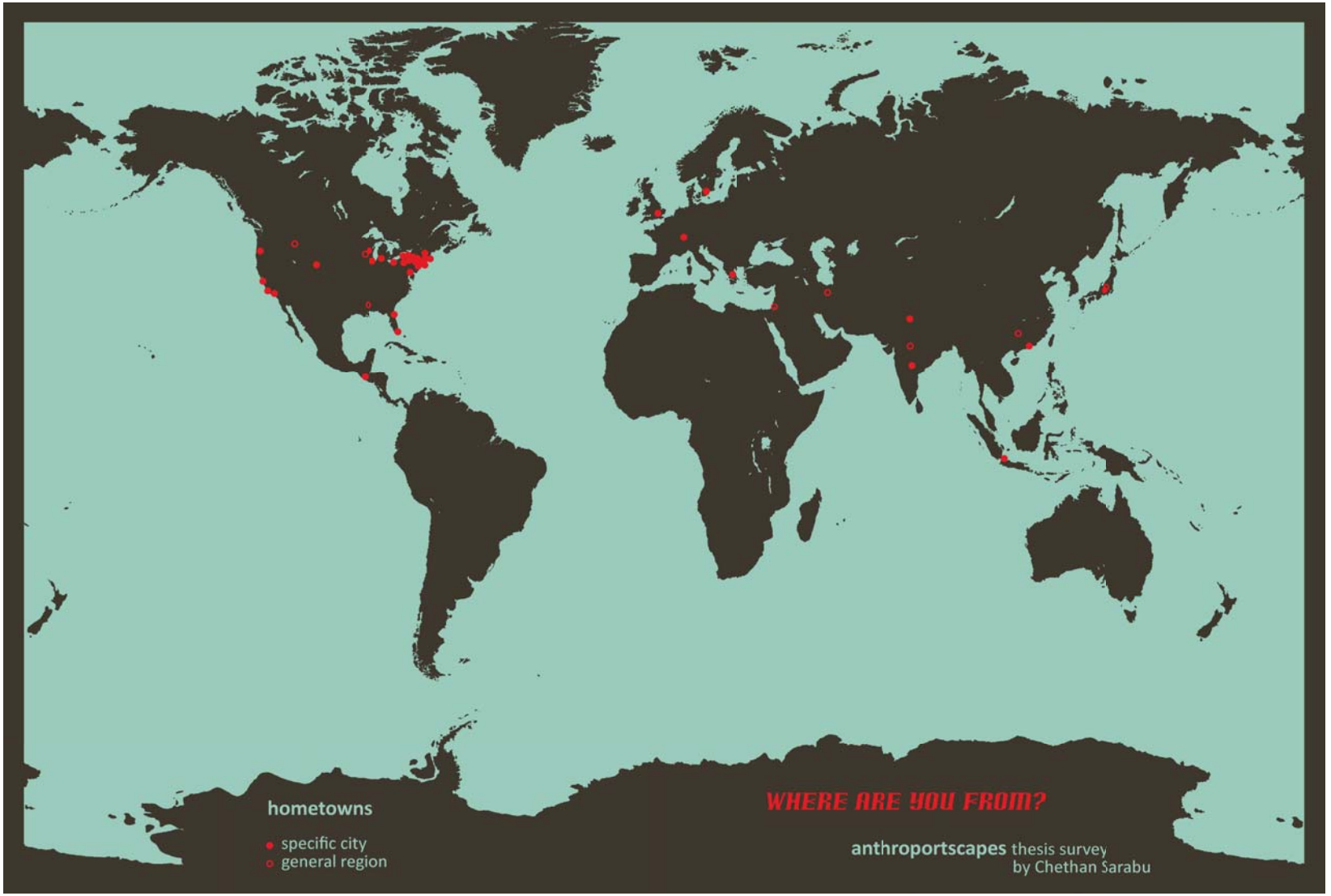


Figure 2.4 | Geographic demographic of survey respondents
This map displays the home city or region of each of the 107 survey respondents.

B / THE EXPERIENCE OF TRAVEL

An important part of travel is an exchange of people, ideas, cultures, languages, foods and so many other facets of our lives. Experiencing something new helps to put one's own culture and lifestyle into perspective. How does this exchange happen throughout our daily interactions? Nowadays with the internet and instantly transmitted media, people are constantly experiencing exchange across numerous geo-political borders. Still this virtual exchange of information is in its infancy and it doesn't offer the full range of human sensory interaction for experiencing a different place. Therefore physical travel is still our primary means of exchange and learning about the world.

Figure 2.5 | Survey Q14 - When you visit a new city what's the first thing you usually do?
It seems that exploration and walking around are a vital part of initially experiencing a new destination.

We are curious about new places, sometimes just for curiosity's sake or other times to compare cultures or places. In my survey about airports, one of the questions asked "When you visit a new city what's the first thing you usually do?" There were numerous responses about finding a hotel or food but one intriguing response was "compare it to NYC." It is very interesting how we benchmark and rate cities. There are all kinds of different measurements for a city's prosperity, and supposed success or failure but often you cannot capture the experience of what that city means to an individual. Through each of our own experiences and personal expectations we have different lenses for analyzing and rating cities. Some might be primarily concerned about the quality of the restaurants, others might be looking for the best public art, and maybe someone else is interested in if the residents of that city actually like living there.

The wordle of answers about what one does when visiting a new city shows some interesting but predictable actions. People are interested in exploring, walking around the city to find places to see and locations for eating. For others still it might be about experiencing a different image of the city. Kevin Lynch's seminal work on the topic of how we create the image of our surroundings speaks about five basic patterns for how we organize our world. These are nodes, paths, edges, landmarks, and districts and together are combined in the mind to construct an image of the city. We use these to orient ourselves in space, and without a sense of orientation, we would be psychotic. This is from the work on human proxemics by Edward Hall, regarding how we use our internal fixed-features of space in combination with the external reality to construct our image of the city. This is why Americans who are used to the grid, such as in Manhattan, have a very difficult time orienting themselves in many of the older European capitals, which are more organic in their layout. (Hall, 1990, p. 105) While it might be disorienting and frustrating at times, this new spatial pattern might create excitement and the ability to get truly lost might be an enticing adventure for some travelers.

One of the earliest questions on the survey asked about general transportation preferences. Airplanes were only favored more than boats and just slightly below the bicycle. A preference for walking and taking the train won the majority of votes. 50% of the respondents in-

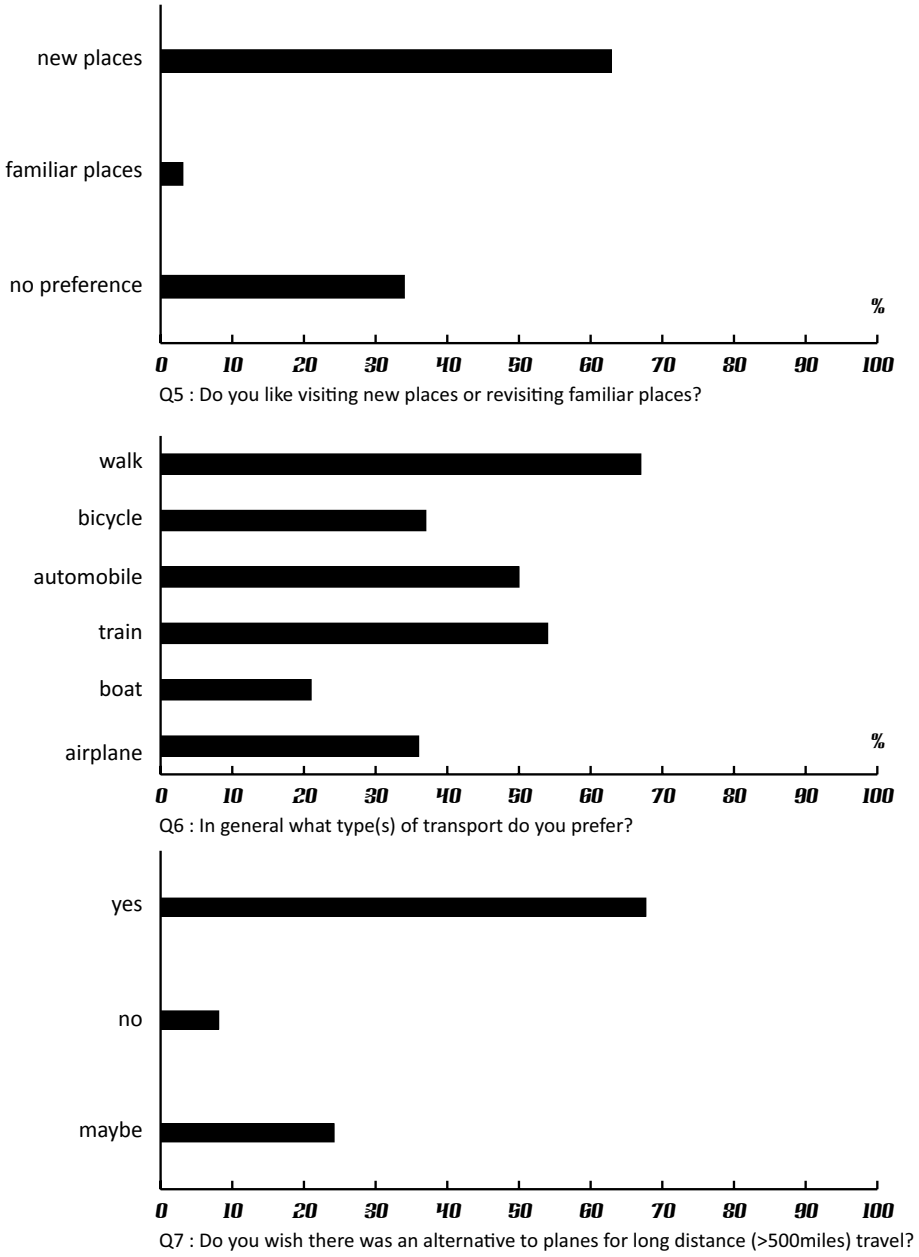


Figure 2.6 | Survey Q5,6,7- Transportation Preferences
What kind of places and what types of transportation do people prefer

cluded automobile travel among their preferences. Of course this question is somewhat meaningless because there is no context for the distance or any other practical parameters. It was just meant to be a general thought question and see if there were any decontextualized trends about transportation preferences. Of course the data might be skewed towards walking because of the high number of landscape architects, whose profession requires walking. However, even still I believe that there would be a generally high preference for walking

These were some of the responses to this question that seemed to reveal an interesting fact about the experience of airports.

"**I CAN'T DECIDE**. I really like going to new places and I think that's maybe most interesting, but I have a few favourite places in the world that I just love returning to, over and over." (Q5 R12)

"Places change all the time. **REVISITING** familiar places can give new experience." (Q5 R6)

"I **LOVE TO DISCOVER** new places,but also revisiting places again allows me to search and find details or hidden gems that **LOCALS** only know about." (Q5 R 15)

as it's innate and very energy efficient, though not as much as bicycling. Walking provides approximately 211 miles per gallon, whereas bicycling yields 912 miles per gallon based off of caloric conversions. (Good Magazine, 2009)

It is fitting that walking, our most natural and readily accessible means of transportation remains the most highly prized. Ralph Waldo Emerson was initially elated by the possibilities of rail travel but soon became disenchanted by it when in 1840 he revealed, "The railroad makes a man a chattel, transports him by the box & the ton, he waits on it. He feels that he pays a high price for his speed in this compromise of all his will. I think the man who walks looks down on us who ride." (Rosler, 1998, p. 34) Of course this all varies with the distance being traveled and other conditions and considerations.

For long distance travel the airplane is still the primary means of travel at least in countries without developed high speed rail networks. Another one of my survey questions addressed this issue and asked hypothetically if people would prefer an alternative to planes for travel over 500 miles. 67.7% of the respondents replied yes, while 24.2% said maybe, and only 8.1% said no. This clearly indicates that there is a underlying aversion to air travel and people are looking for alternatives but nothing seems to be realistic. The most promising alternative is high speed rail, especially in America where it has not been given much attention. Most people wanted something more comfortable, less frustrating, but had to still remain fast and so they could not propose an alternative to planes. This is probably the case for now, the only other technology that seems promising are new high speed blimps, which can travel from point to point at 175 miles per hour, that is still much slower than planes but potentially faster than most high speed rail. People are seeking alternatives to planes for long distance travel but right now they remain the best choice and so airports remain key nodes of globalization.

When and how does one start preparing for a trip?

One of the most under-looked parts of the airport experience is the preparation and journey up to the actual trip. Ordering tickets and packing backs is a very important part of the whole airport experience but it is one that is lived out at home so it becomes decontextualized from the actual airport itself and thus many airport designers might not take into consideration the actual conditions of how air travel is affecting the person at home. This involves everything from initially planning the trip, to ordering the tickets, packing the bags, and rechecking everything before making the journey to the airport.

This wordle represents the responses people gave to the question “when do you start preparing for a trip?” I was surprised to find months and month at a higher frequency than weeks and week, seeming to indicate that people plan out their travels early rather than at the last minute. One of the considerations regarding this might also be influenced by the age range of the respondents, with the skew to the

Figure 2.7 | Survey Q8 - When and how do you start preparing for a trip?
There are many steps and ways to prepare for traveling and generally months comes up at a greater frequency than days or weeks.

younger side there are very few people who had to travel for business. Leisure travel probably means spending more time researching and preparing for a vacation rather than a required business trip where there is probably not much time or impetus for discovering and reading about a new destination.

“I start planning it a long time ago, but a few days before, I plan how I’m going to make myself fall asleep for the majority of the trip and not get thirsty” (Q8 R1)

“Maybe a half year before. I would decide when I will take a vacation (and how long) and then start thinkning where I will go according to the length of vacation and the season.” (Q8 R6)

“i’m not as organized as i “would like” to be. i am often a last minute traveler.” (Q8 R12)
“3 months” (Q8 R13)

“Start a month or two before by Reading about the place’s history, economy, culture, movies. look for popular sites to visit. Learn basic language skills” (Q8 R50)

“Depends on the length of the trip, how many memebers travelling, their ages. If travelling single- prep time is a day before the trip, if travelling with family more prep time will be required.” (Q8 R91)

These are just a few of the actual responses to the question, the wordle obscures the minutiae of the responses but overall there was a trend towards months of preparation. The question was purposely vague and although some respondents indicated this, most people

gave clarification about the context, but some did not and this made it interesting. Respondent 91 makes an interesting point about how the preparation time really varies depending on whether the trip is solitary or with family. This is probably one of the strongest contextual influences in preparing or planning for a trip. An important part of this preparatory phase is the perusal of travel information and the purchasing of tickets. Recent technological advances have dramatically shifted how this process works.

With the growth of the internet, one of the big shifts in the airline industry is how people book tickets. Previously, it was standard practice to visit a travel agent in order to navigate the complex system of ticket booking and vacation deals. Nowadays it has become a personal task, through a variety of web portals it has become standard practice for individuals to book their own tickets as well as a rental car, hotel and full vacation packages as well. There has been a rapid proliferation of websites for ordering airline tickets as well as the other related travel amenities. Some examples include expedia.com, travelocity.com, priceline.com, orbitz.com, among many others. This has resulted in the need for aggregating search sites such as kayak.com, which searches all the other airline sites to provide customers the easiest path towards finding the cheapest alternatives.

What is the source of information about new destinations and places to visit? With the immensely broad range of places all over the planet how does one hear about and decide where to go. Of course there is the branding and image that cities and locations exude which probably color many people's ideal vacation spots. This is transmitted through multiple media forms, today it is most prominently the internet, the primary source of information about the world's myriad of destinations. With the advent of flight booking websites people now have much more individual control and choice but this additional information might be burdensome and overwhelming in order to find out where to go or what to see. Of course talking to friends or family as well as travel guidebooks are also still relevant and helpful means of understanding the world and various travel potentialities.

Figure 2.8 | Survey Q9 - What's your source of information about a new destination?
The internet is the predominant tool for the majority of respondents, on the there is a screenshot of kayak.com, one of the flight booking websites

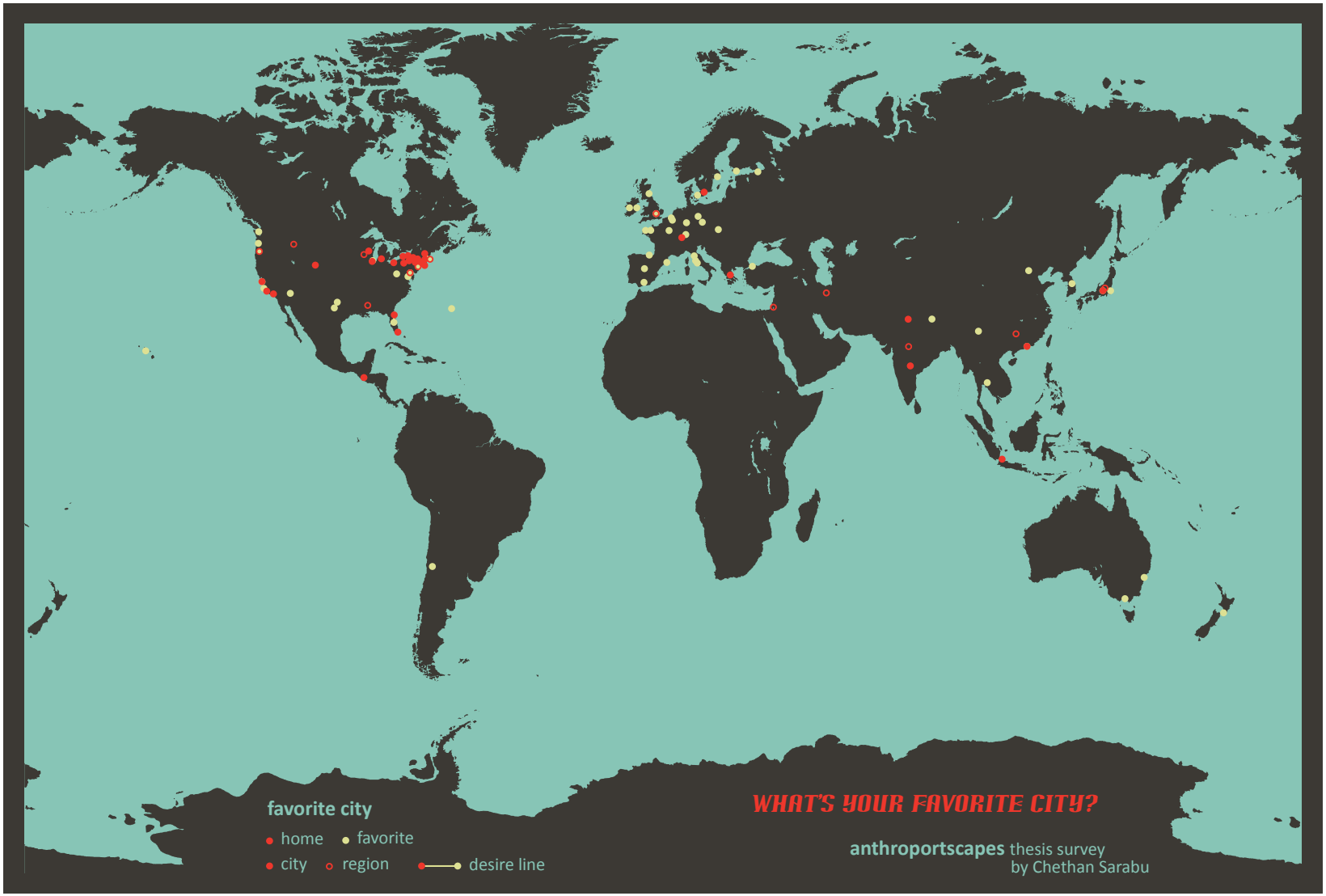


Figure 2.9 | Survey Q11 – Of all the places you've been to what is your favorite city?
Red Dots indicate home city and Yellow Dots indicate favorite city

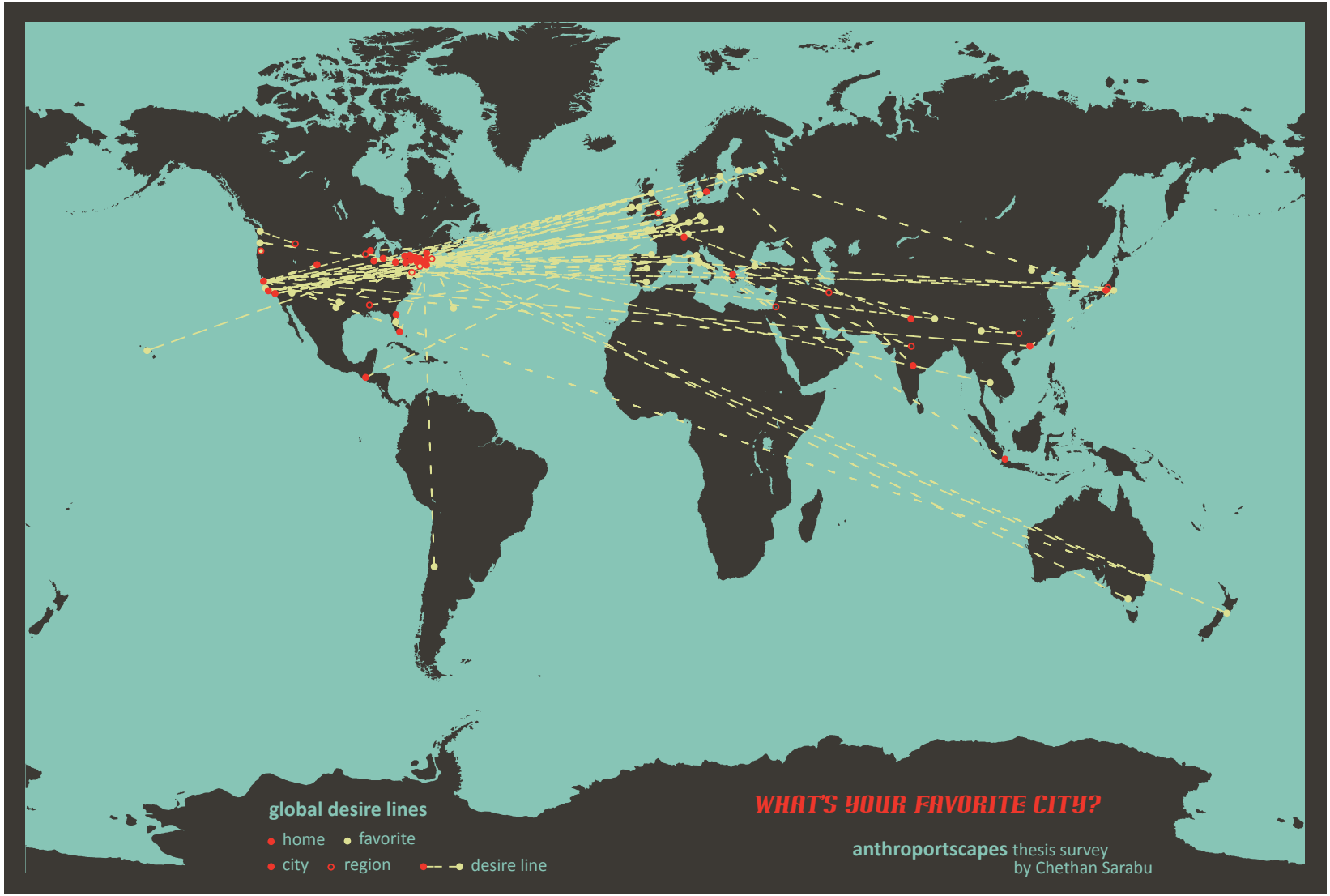


Figure 2.10 | Survey Q11 – Of all the places you've been to what is your favorite city? (with desire lines)
Desire lines might elucidate geographically biased or based preferences for other geographic regions

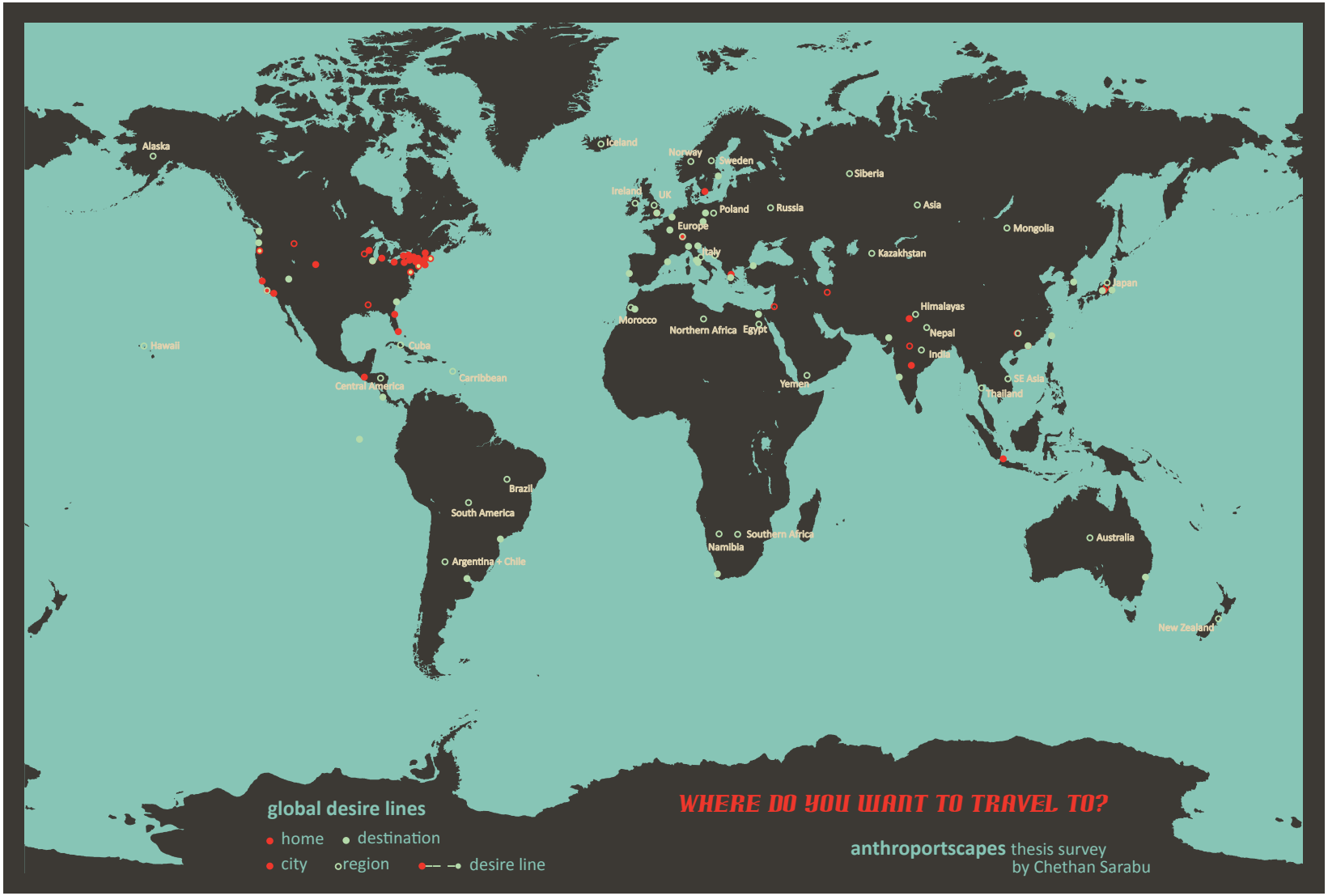


Figure 2.11 | Survey Q12 – Of all the places you haven't been to where would you like to go?
Many respondents indicated a region instead of a city, therefore open circles with names are used

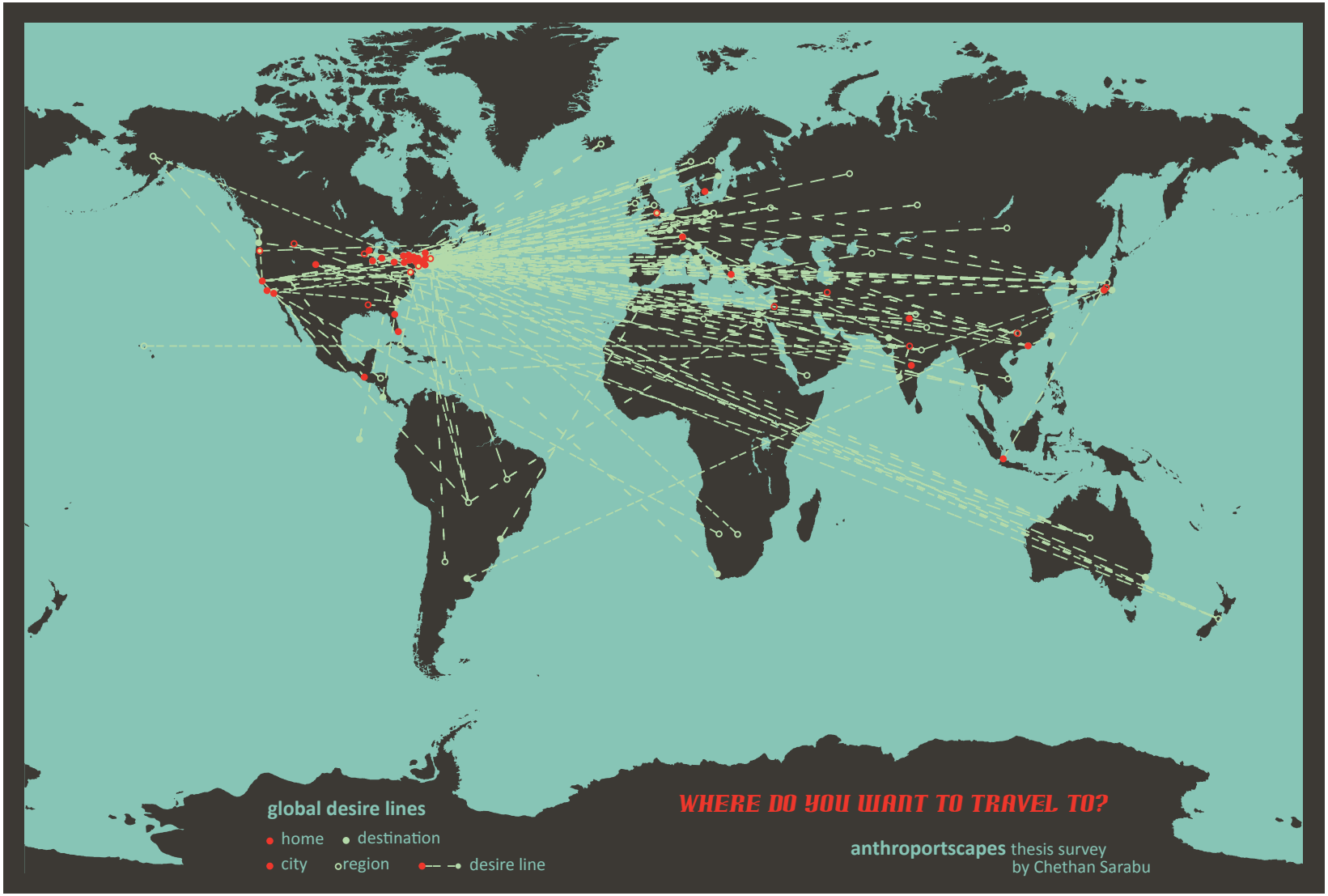


Figure 2.12 | Survey Q12 – Of all the places you haven't been to where would you like to go? (with desire lines)
Desire lines might elucidate geographically biased or based preferences for other geographic regions

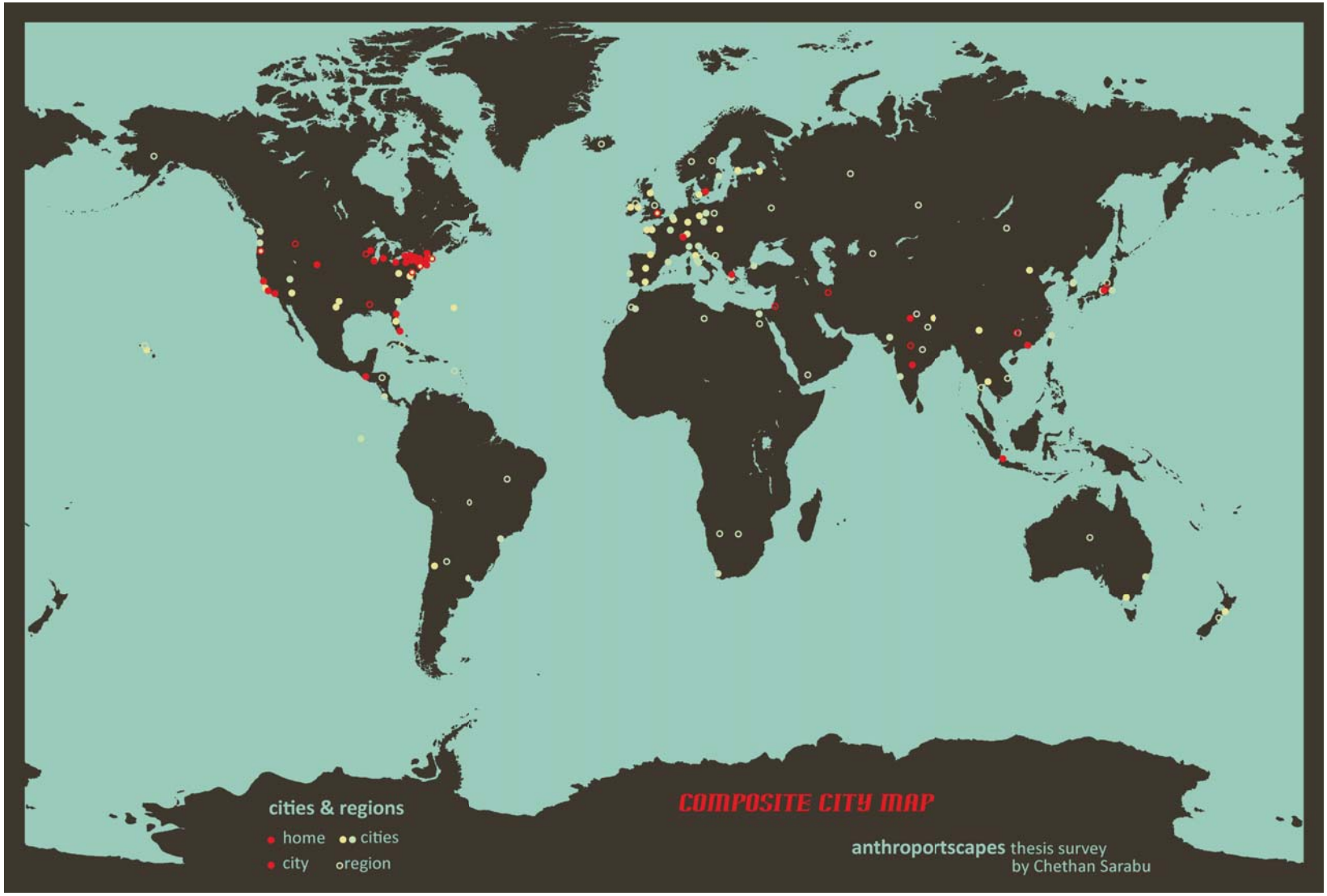


Figure 2.13 | Composite Map of all cities and regions indicated
Shows the broad range of places across the world that people have in mind or are from

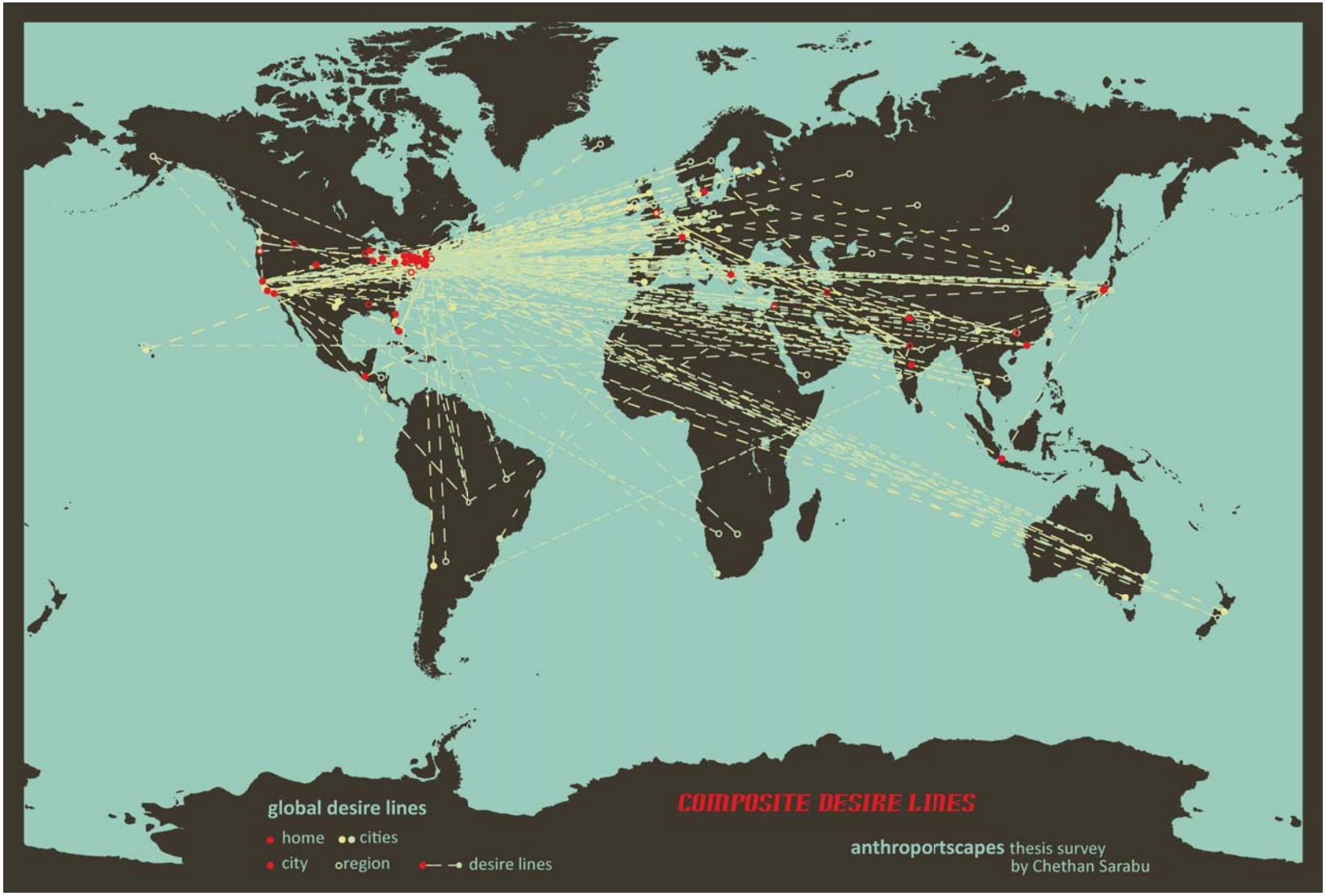


Figure 2.14 | Composite map of all cities and regions indicated (with desire lines)
The majority of respondents are from the northeastern United States and like or want to travel to cities in Europe

C / THE AIRPORT EXPERIENCE

“The airport is where you would rather not be, on the way to somewhere else.” (Pascoe, 2001, p. 203)

One of the questions on the survey asked “Do you like airports? Are you comfortable in them?” This yielded some interesting responses and overall the inclination seemed to be towards liking airports, but not all that much. The responses seemed to indicate that for the most part, people were comfortable using them and getting through but did not find them particularly charming places to stay.

“I abhor airports, am not comfortable in them they are a curse and time and money waster!!!” – Survey Respondent (Q18 R29)

“yes i like airports because when I’m there I am always on my way somewhere (or just back brom a trip). I get a kind of nervous but still an excited and generally happy feeling in airports” – Survey Respondent (Q18 R36)

“No - I typically feel overwhelmed by the scale of the airport - lost in a sea of people who hardly ever interact with one another and get extremely stressed when my plane has to taxi for hours before take-off. It seems that with large size punctuality has been sacrificed.” – Survey Respondent (Q18 51)

“I am amazed at the coordination but do not like them because of the rush, the potential for making mistakes and getting lost or missing a flight, the crowds of stressed-out people and bad food.” - Survey Respondent (Q18 R79)

“It depends...sometimes I’m claustrophobic :(And saying goodbye in an airport is often heartbreaking” – Survey Respondent (Q18 R82)

One of people's greatest fears of flying are the long waits and unexpectedness of delays. These setbacks in journey time can have significant emotional effects as people are not very much in control of the situation. (Meurs & Verheijen, p. 107) This great unpredictability in timings for air traffic is mainly due to the complex optimization problem of scheduling flights as well as the worldwide weather conditions that create rapid ripple effects throughout the chain. On top of that, the technological systems that create the air traffic control network are very outdated and cannot be easily upgraded because the system must remain online at all times. Frustration is a product of unpredictability, but hopefully improved air traffic control technology might help to alleviate some of these problems. Although due to the fickle nature of weather and the technological complexities inherent in optimizing such a system, unpredictability and frustration will persist. This is only part of the problem with creating a comfortable atmosphere at the airport.

Airports for non passengers

The rapidly growing services offered at airports require an ever expanding workforce. The number of people who work at the airport can run their own city. However, there are strong tensions between the workers and the passengers, because the humanistic elements of the airport are usually geared towards the passenger. They often fail to take into account the lifestyle of those who work there, furthering discord and anxiety in this already stressful environment. One striking example of a non-passenger airport experience comes from an air-traffic controller. Their requires constantly monitoring radar screens which show all the passenger airlines as small blips and even though the controllers know that those dots represent other fellow humans they cannot think of them that way. To be able to perform this job day after day, they need to decontextualize themselves from the real scenario they are controlling and instead think of the process as a video game. (Rosler, 1998, p. 33) Of course this might not be representative of all air-traffic controllers but it definitely is a strong example and is important to consider in the entirety of airport experiences.

Figure 2.15 |Wordle of Survey Q18 - Do you like airports and are you comfortable in them? (common English words not removed)
People are fairly comfortable in airports on average

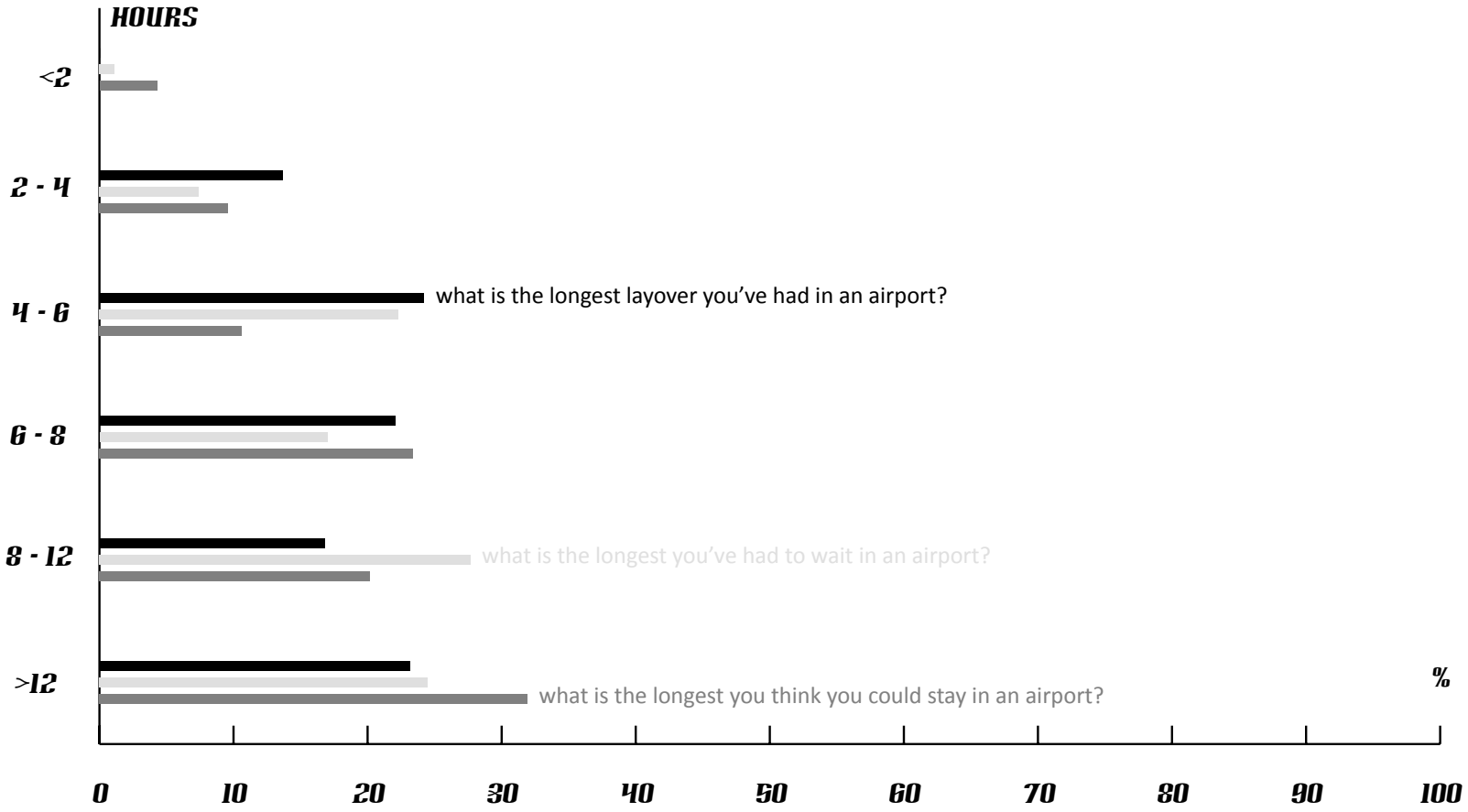


Figure 2.16 | Waiting in Airports
The longest layover due to a changing flight had a peak of answers at between 4-6 hours, whereas the majority of people had to wait in an airport for 8-12 hours. Interestingly the greatest number of respondents indicated that they could stay in an airport for over 12 hours.

Figure 2.17 | Survey Q45 – Have you ever planned a trip so you could visit a certain airport?
Not many people have planned trips to visit a particular airport, but of those who did, the following map indicates those airports which were specifically chosen for traveling.

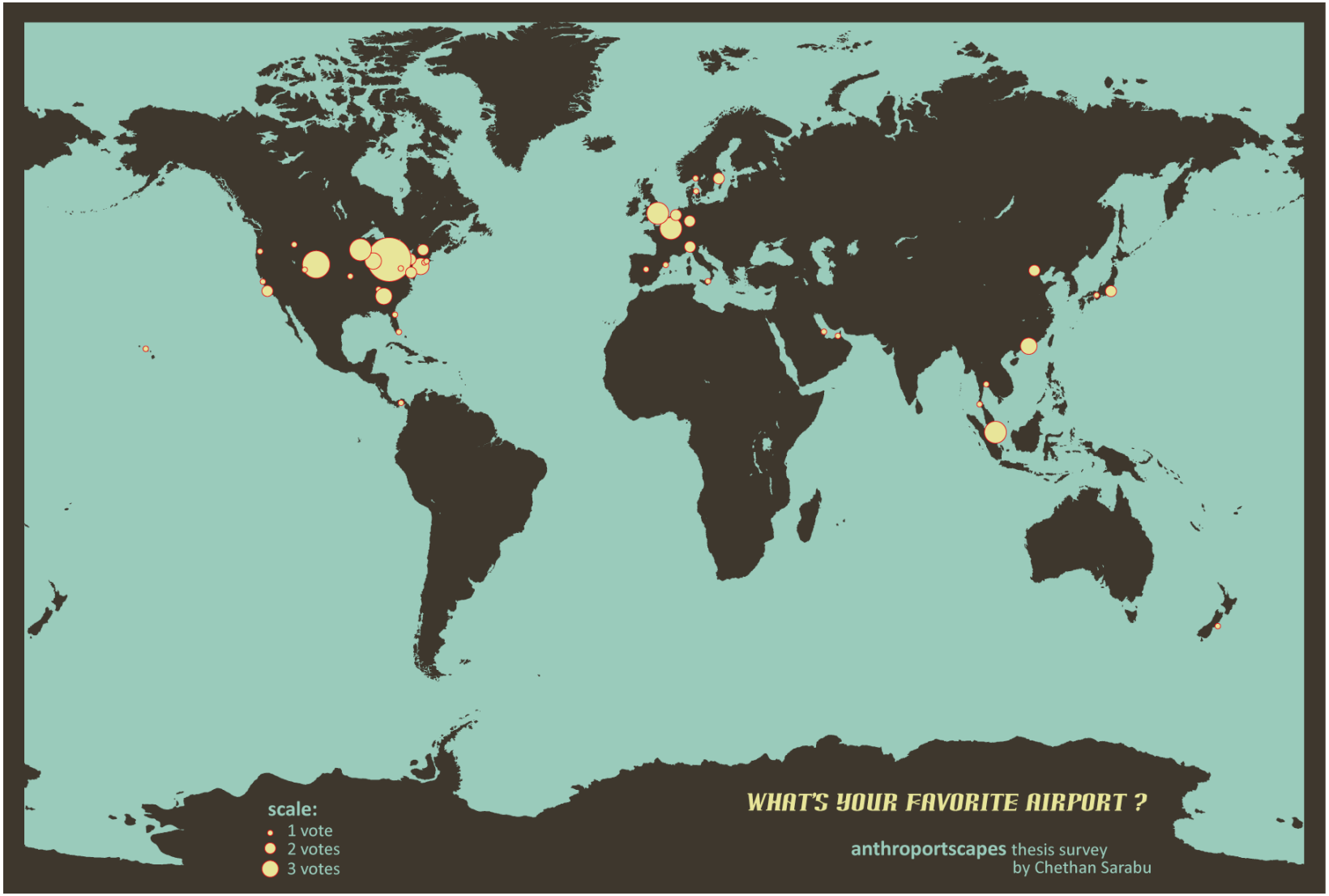


Figure 2.18 | Survey Q19 - Of all the airports you've been to, which one is your favorite?
Interestingly the number one airport of everyone surveyed is Detroit. Chicago (O'Hare), Denver, London (Heathrow), Paris (CDG), and Singapore are some of the other favorite airports.

Airport Stories

In addition to the survey questions that I asked about peoples airport experiences I also included a variety of variety of online opinions, they are usually attached in the comments section on articles about airports. There a variety of features asking people about their favorite airports, such as on Wired or CNN, and sometimes a web article putting all of these issues together. Many of these comment boards also feature ways of voting up or down someone's response, giving these a more solid online community backing.

Many of the comments are quite strong and opinionated. Some of them are quite negative and seem to be a place for people to vent their frustrations with modern air travel. "I've flown out of a ton of major airports. Narita, LAX, DAL, STL, CHI, ATL, Charles De Gaulle, Frankfurt, Stuttgart, etc. They all have way too many retail stores and not enough seating in the gate area and are bleak hospital-like buildings where promotion of comfort or calmness in their patrons is a distant afterthought. Pretty much all of them should be bulldozed without exception and we should start from scratch with traveler comfort and efficiency being the #1 priorities." This is quite a reaction and is aptly titled, "They all Suck" and it received 15 upvotes from the web community. (Demerjian, 2008)

One of the interesting things is that we each only have our experiential slices to talk about, but we extrapolate this out to fit the whole airport, and even the whole city. If one steps into the city then this first impression gleaned at the airport will either be validated or repudiated. However, as in many cases, the passenger might never actually go into the city and then there is no metric for evaluation. The slice of the airport they have been through might even be strong enough to color one's perception of an entire region or country, even continent.

No matter whether people love or abhor airports it seems that everyone who has flown has a story to share; people especially love to talk about the worse security problems or delays that they've experienced in almost a tall-tale telling fashion. They also reveal some interesting aspects of human interactions and the functioning of airports. This was one of the final questions on the survey, a chance for people

to share any stories they felt were interesting. For example one survey respondent replied, “I once slept a whole night in the Charlotte airport chapel because it was the only warm, dark and quiet place in the whole airport. A police in the security check recommended it. I had a really good sleep!” (Q33 R16) This story might reveal some inadequacies to the Charlotte airport operators that might consider addressing, but what was really interesting was that it was recommended by the security guard. These small acts of kindness and human care among strangers serve to make a more welcoming and habitable environment. Another respondent pointed out, “There’s this sense of togetherness with other people spending the night at the airport when that happens.” (Q33 R36) People are looking for the human element even among strangers and this suggests something quite powerful about the strength of human bonds even in an environment that is predominantly about flow and liminality. This bonding and temporary community is usually a result of stranded passengers coming together to share their frustrations about the airline or airport and the horrible predicament they are in. (Gottdiener, 2001, p. 30) When these experiences become shared, people are able to cope better and can this can hopefully reduce their frustrations.

Figure 2.19 | Survey Q33 - Any interesting stories to share?
The wordle jumbles many of the responses but it is interesting that many stories seem to involve security

Relatively recently airports have transcended their primary function of facilitating flight and have become more like shopping malls. They offer various goods and services from all over the world, encouraging consumption. In fact at many of the world's key airports, the revenue from secondary functions such as retail, hotels, and conference halls exceeds the amount generated from flying itself. (Edwards, 2005, p. xii) However the vast architecture of most airport terminals discourages human-scale activity and is an inherent problem in the design of modern airport terminals. (daab gmbh, 2005, p. 6) This brings up a big problem that another survey respondent elucidates, "waiting for a long time in an airport is always very awkward, because you want to do something besides sit in a chair the whole time, but you have to watch your heavy bag and make sure that you're in the right place at the right time. I'm always very worried that if I go anywhere besides my gate, I'm going to forget about time and miss my flight. And then you also have to feed yourself throughout the day, and the really good food places are usually in a more central area, away from the gate... very stressful." (Q33 R17) There is an inherent tension in the logic of how airports are planned and this is the awkward waiting that the respondent is alluding to. Airports are designed to shuffle passengers through efficiently and also make them stay as long as possible in the airport so that they will spend more money among the retail situated there. When they try to both it creates frustration for the passenger, the airport needs to create large walkways with ample room for flows, in order to facilitate efficient traffic to reach the planes in time. This is only half of the problem though, now that people have more time to spend they would like to visit retail but the architecture of flow efficiency is not one that meshes well with an architecture of dwelling and relaxation.

Airport to City

When a new visitor lands at the airport, they are in a hurry to escape and go visit the city. Then there are others who are idling at the airport waiting to switch planes, they don't have the chance to experience the city, all they witness is the urban slice the airport offers. Usually the lens of the city at the airport provides is superficial at best, employing local imagery and the name of the city. Some take this further and use local materials, present local cultural artifacts, and the culinary delights of that region. The very best airports manage to take this

to the next level and really develop a sense of place and identity in an environment that is predominantly about network flows.

“read, get a snack/meal, use the bathroom, browse shops but usually only purchase a book, look for transport if I’m staying in the city” – Survey Respondent (Q30 R35)

“if its my final destination I usually try to get away from there as soon as possible. Otherwise, I’ll have a look in the shops, read a book, listen to music, have something to eat, maybe check my mail if they have computers with internet.” – Survey Respondent (Q30 R36)

“with layover: go through security etc, read books at the bookstore, nap, refresh myself (water, stretching, etc.). No layover: get what I have to done and then leave asap” – Survey Respondent (Q30 R76)

Figure 2.20 | Survey Q30 - Once you land at an airport what are the things you do?
Most people seem to be in a hurry to escape the airport, does it have to be this way?

Figure 2.21 | From airport to airport to city
My first visit to Indianapolis really sunk in when I was waiting en route in the Philadelphia airport, that is the sign in the first image. The middle image is the Indianapolis airport and the final image is my first shot of downtown. This was the process by which the image of the city was constructed through the airport journey

Do you use the airport to find out what you can do in the city?

"Not usually, I think if that kind of service was going to be provided it would either have to be very inticing to make me want to engage it or very convienant." – Survey Respondent (Q32 R22)

"only if there's actually an information booth - I'm interested in what to do in the city, not just who's paying to advertise." – Survey Respondent (Q32 R34)

"only if I feel like I have a very poorly worked out plan of what I want to do or stay in the city. My experience of information in airports is that they recommend expensive hotels/attractions, or things that im not very interested in." – Survey Respondent (Q32 R35)

"sometimes, airports are your starting point so I've used them to find transportation, maps, and ideas for what to do" – Survey Respondent (Q32 R54)

“Airport food is overpriced and not usually good. You get a weird feeling of an odd subculture within the airport, like its not at all connected to the real world. It is like a parallel reality in a way, existing within itself.” (Q33 R41)

Air travel robs passengers of their sense of time, why do airports also need to rob them of their sense of place? Why use the same modular furniture, generic terminal designs, contracted food services and other general elements of ubiquitous airport design. Airports were supposed to glorify travel and hence showcase the world and the amazing diversity of civilization. If the first glimpse passengers receive of a new culture or location looks just like the place they left, then a huge opportunity has already been squandered aimlessly. Starting with architecture, many of the world’s airports are very similar in their layout. Although historically airport architecture has been at the forefront of change, it has mainly been about superstar architects designing works of art that do not necessarily reflect their surroundings. In recent years, with the boom of airport building in Asia and other regions, many of the airports are rapidly rising and in emulation of the West their designs look European and American. At least like European and American airports, if not actually representative of those regions.

How many cities have you been in without ever visiting them? I am of course talking about hub airports, where you stop by and explore a slice of local culture on a global trek. (Fuller, Life in Transit: between airport and camp, 2003) Airports should be designed to best serve and fit their city. If a city builds an airport solely for its significance on the global air network, it will ultimately be for the ruin of that city. What is the broader city-airport-people relationship? Airport’s vast size leads to numerous peripheral experiences: for example, the family that has never flown, but always sees the signs to the regional airport, on their daily commute; the children who hear the constant roar of airplanes; and so on. Manual Castells speaks about how cities are no longer designed with a stable identifiable core but rather around the networks of flows. (Derudder, Devriendt, & Witlox, 2007) These flows are constantly reshaping cities and this phenomenon is accelerated through airports, which connect and reveal both strong local and global flows.

3. AIRPORTS INTO ANTHROPORTSCAPES = PEOPLE + PORTS IN THE URBAN LANDSCAPE

A / AIRPORTS

"There is little debate over the observation that the recent phenomenal increase in the number of passengers has thrown our air transportation system into a deepening crisis of inadequate infrastructure. Heightening these concerns is the realization that, unless checked, the present conditions will only get worse in the future." (Gottdiener, 2001, p. 188)

Airports have evolved greatly throughout the first 100 years of flight. Currently the fate of airports is uncertain. On the one hand, they have the power to elevate the human imagination, bring together people from around the globe, provide jobs for thousands and are the primary vehicle for physical exchange. However, airports also cause numerous problems; they best serve those with the most money (Rosler, 1998, p. 77); and they often ignore the needs of a local culture in favor of the global network. The very practice of flying is tremendously energy expensive and expels a vast amount of greenhouse gases. Airports facilitate this wastefulness and they damage their surroundings with further problems such as noise pollution. It is arguably the least sustainable and most destructive infrastructure. (Pascoe, 2001, p. 112) Upham has coined the term, environmental capacity as the upper limit for airport expansion, it is the human and non-human elements of the environment's ability to withstand the activity of the airport. (Cidell, 2006) In lieu of sustainable development, the entire air industry seems to be a major problem. Their future is uncertain. However, there is so much optimistic potential to revision the airport.

This issue is best realized by the very current problem of runway expansion at Heathrow in London, the airport argues that it is needed to keep London a viable and dominant hub in the global airspace. Furthermore, Heathrow is the major economic driver of London, without it the city might not make it, some argue. But to operate, it expels large amounts of pollution and uses up city resources. A vocal groups of

concerned citizens has risen to protest runway expansion and this movement has galvanized a huge following. Meanwhile another group Modern Movement, has risen to counteract the environmentalists protest, arguing that it is every citizen's right for fast, cheap, and reliable travel. The good news is that people are talking, discussing, and rethinking our current living paradigms.

Strengths	Weaknesses
Captivate Imagination	Huge Greenhouse Gas Emissions
Provide fast access	Create Noise Pollution
Can accommodate huge flows	Omnitopia
Well connected with public transportation	Trapped Spectatorship
Receive high government attention	Boring
Sense of Excitement	Security Risks
Unique Public Spaces	Image of disconnect

Figure 3.1 | Excitement and Concerns around Airports
Airports provide many exciting strengths as well as a plethora of weaknesses. Children are elated to experience the wonderful process of flight but are trapped behind a series of regulations

At the end of his thorough book on airports, Hugh Pearman presents six scenarios for the future of this most revolutionary structure.

1. More and Bigger : the rise of new-mega airports continues
2. Hiatus : a combination of factors reduces global air transportation
3. Deus ex Machina : new technology fundamentally transforms airport terminal typology
4. The New Woodlanders : the virtual world replaces the need or desire to travel
5. The Detached Terminal : the terminal is detached from the runways
6. Redispersal : smaller regional airports dismantle the hub and spoke model

(Pearman, 2004, p. 234) These six different scenarios are all possible to some degree and so are the multiple combinations of them. Some scenarios might apply to certain global regions, while other cities might incorporate a fraction of some of these futures. Pearman's analysis and future predictions are very astute and encompass a broad set of future permutations.

1. More and Bigger: the rise of Chinese airport projects. China's General Administration of Civil Aviation has plans to open 97 new airports in China by 2020. (National Geographic Traveler, 2008) Most of the new airport projects constructed throughout Asia have followed this paradigm of continual growth.

2. Hiatus: September 11th was a major in reshaping global aviation trends. Although overall passenger volume is still on the rise, it caused a pause and then in its wake increased the level of security and stress. Although global aviation numbers have continued to rise steadily throughout the past century there were a few periods of decay. In the late 1960s most American airports became stretched to capacity and this condition worsened to the point of passenger numbers decreasing. (Gordon, 2004, p. 218)

3. Deus ex Machina: Airports are poised to become multi-modal interchanges between various transportation types. (Nallamuthu, 2003) Some already are incorporating high speed rail and other technological innovations directly into the airport. At Heathrow in London, the company ULTra will be unveiling their pod car system which provides point to point and on demand transportation for small groups from the periphery of the airport to the terminal. New technologies such as these might ultimately lead to a fundamental transformation in the way the airport is organized and functions.

4. The New Woodlanders: According to the technology theorist Ray Kurzweil it is possible that transportation may soon include not traveling at all. Rapid advancements in 3 dimensional virtual reality that incorporate additional human senses such as taste and smell are in development. They might be able to provide the experience of traveling with a much smaller carbon footprint. (Good, 2009) There is also the possibility that people become less interested in travel in general with the increasing homogeneity and mixing of the world as accelerated by the internet.

5. The Detached Terminal: The Stewart International Airport plan to build NYC's fourth airport 60 miles north of the city in Newburgh, NY could employ a system where the check in and terminal services are within the city and then the runway is up in Newburgh. It is about decoupling the functions and developing a transit oriented corridor along the way. There might be new security concerns in providing more of a gap between arrival and entering the plane.

6. Redispersal: Low cost carriers work because they operate on a point to point system. Their recent rapid growth has definitely given more credence to this system and could threaten the global hub system. (Derudder, Devriendt, & Witlox, 2007, p. 3) This has led to a simultaneously strengthening of regional airports, especially for internal flights within China and also throughout Europe. (Thomas-Emberson, 2007, p. 44)

The condition that is missing is how a new human consciousness veering away from consumerism might redraw what we think of airports. "We're reevaluating many aspects of daily life, including what we eat, where we live, how well we take care of each other, how much and how far we travel, what kind of work we do, and how much free time we have. We're starting to imagine what a more moderate, efficient, compassionate lifestyle will look like, and feel like. (Wann, 2007, p. 1) Humans are not consumers in a machine but rather expressive, creative, beings that can take an active part in understanding and shaping our world so that it can be passed onto successive generations. Reducing our overconsumption while simultaneously finding greater meaning and developing a deeper appreciation of life are fundamental shifts that we are experiencing currently. They are also critical for understanding sustainability and travel. The growth of new sustainable tourisms: cultural, eco, volunteer, and so on are fundamental to rethinking the airport. There needs to be a new consciousness of human understanding imbued into the process of travel and tourism otherwise it will continue on a destructive path of unsustainability. This idea, in combination with all of Pearman's insights is the force driving my dissertation about the new airport typology.

A related example of this can be witnessed in the car manufacturing industry. Many of the new manufacturing plants of the automakers are including theme parks, museums, and leisure venues. They want customers to engage more with the experience and develop a more interactive role in the production process. (Klingmann, 2007, p. 30) With this paradigm auto manufacturing is not such a single faceted event of the factory working making the car, but rather it has become an engaging spectacle where the customer becomes involved with the construction process. By allowing the end user to see at least some of the work and time that is invested in developing their product they might appreciate it more and be less likely to purchase a new car so rapidly. This connection to the process might also help make the customer aware of the huge spiraling problem of resource consumption.

Assessing social consciousness is a tricky task, one that has no clear barometer. It is hard to quantify the ethical and environmental viewpoints of individuals or even of societies at large. One of the key indicators of the shift is the emergence of multifaceted thinking to ad-

dressing systems problems. People are beginning to value and demand that infrastructure not be just about one single task but rather should also include a broader range of human activity and support systems. This mode of thinking has become increasingly followed by airport planners and designers. Bernard Tschumi had presented a proposal for Kansai airport in Osaka Japan that was supposed to be an event city whereby disparate programming would be brought together and hybridized together to promote “urban liveliness.” (Klingmann, 2007, p. 113) People flying through airports want to see additional facilities and amenities.

This was one of the key questions in my survey and 88% of the respondents agreed with this and followed up with some suggestions and explanations of what those additional facilities should entail. In choosing from a list of facilities that I had asked about, the number one choice was, places for relaxation, with 88.4% of the respondents choosing this. Closely following places of relaxation was an increased presence of nature with 81.1% of survey takers agreeing. These are two aspects of the airport that are probably closely related to each other as the creation of ‘nature’ or ‘nature-like’ settings within airports are probably places of relaxation or reprieve from the general hustle of the airport engine. This is probably a great starting point to think of how to make the airport more comfortable and catered to humans rather than flows across the globe. It is time to fundamentally rethink the airport.

Figure 3.2| Survey Q 29- What are additional facilites you would like to see at the airport?
In addition to the options that were provided (see the following page) there was blank space for respondents to add their own suggestions. It seems that free, clean, better, things are highly requested

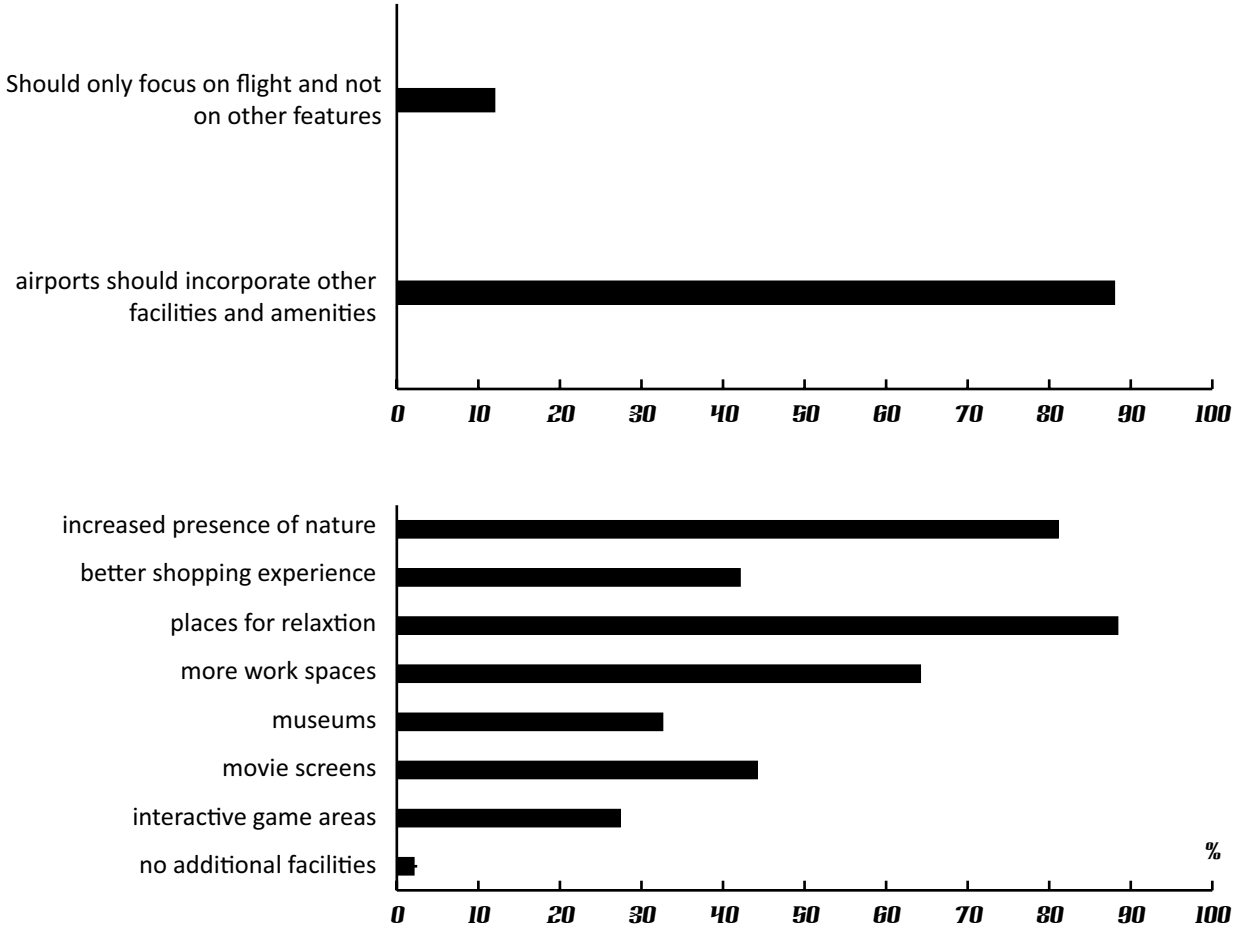


Figure 3.3| Survey Q 28 +29- What are additional facilites you would like to see at the airport?
The two most requested additions to airports are places for relaxation and an increased presence of nature, these two choices seem to go hand in hand.

“The problem with using airports as advertisements of the surrounding city is that the traveler is not in that city. The airport is essentially neutral space - almost a different country. People cannot (or at least don’t want to) leave the airport, even with long layovers, because the hassle of security is too high. So it’s almost like they aren’t in that city at all - they are in some sort of limbo, just waiting for their final destination.” – Survey Respondent (Q33 R23)

“I answered “no-additional facilities, just focus on air travel” because, airports, as periphery locations to cities I would rather see such facilities “in” cities.” – Survey Respondent (Q33 R19)

“Airports are extremely isolated from their environments. It is hard to gain a sense of a place by visiting the airport. They are are very similar, and while this uniformity does have some advantage, I would like to see more integration and interaction with the outside environment” – Survey Respondent (Q33 R35)

“There’s this sense of togetherness with other people spending the night at the airport when that happens.” – Survey Respondent (Q33 R36)

“I like talking to people I don’t know in airports. I’ve met a lot of great people that way. I think the food could be better and i think security can be incredibly rude and getting a cab home from JFK is nearly impossible unless you want to wait 15 years. Oh, and I love Japan Airlines.” – Survey Respondent (Q33 R42)

B / ANTHROPORTSCAPES

If airports continue on their current trajectory without major changes in how they operate, then they might not be fit for survival in a sustainable future. "Twenty-first century airports will undergo a major metamorphosis if they are to achieve their total physical, social and economical potential." (Nallamuthu, 2003, p. v) This is where the anthroportscape enters; it is a progressive vision of the airport, one which is democratic in its availability, promotes cultural resilience, and is organic in its connection to the city. Although the anthroportscape does not directly aim to curtail air traffic in aims of reducing carbon emissions, it is an urban element that can survive even in a world without planes.

New Terminology for New Times: Anthro + Portscape

The word airport doesn't encompass the broad complexity of their current physical manifestation. Airports refer just to flying and the point of arrival or departure. They experience of using airports is now much more involved, either for better or worse. Therefore the term Anthroportscape is introduced. Anthro refers to the vast volume of human capital that flow through and inhabit airports. Portscape is an extension of the singular port into a term that broadens its connection to the landscape of its urban location.

The anthroportscape is both a prominent urban destination and vital city infrastructure. It celebrates and preserves the local identity of the city while also embracing its role as the gateway to the wider world. Currently airports are designed to be part of the global flow and remain a vital city infrastructural node; this is primarily due to the forces of efficiency and the market driving their design. However, in order to preserve local identity and become an urban destination they will need to employ new design and planning paradigms. As Pulitzer Prize winning critic, Robert Campbell remarked in a recent talk, "cities should be designed for inefficiency." (Campbell, 2008) After all they are

about dwelling and providing a fertile bed for rumination. Efficiency is not what makes cities great. Anthroportscape design which calls for greater dwell time might need to rely upon designing for inefficiency to make a more humane airport experience. Of course this must be reconciled with the challenge of maintaining global flows and networks. However I believe that a greater focus placed on dwelling-based human-scale design in airports can promote an airport so that it moves up the ranks of the world's great airports.

To become a sustainable global infrastructure hub and remain a top urban destination, airport design must follow the rules of ecology. As previously mentioned, airports only serve a small segment of a given cities population. For example, if someone is dropping off or picking up relatives at an airport, that person usually has no way of interacting with the airport's features, except with its labyrinthine road and parking schemes. After a long drive, due to the fact that most airports are on the cities fringe, the meeter/greeter as he is typically known, is not allowed to use the airport. In many American airports, the person who is waiting needs to wait in a remote "Cell-Phone parking area", where they await a call from their arriving passenger. They have been further removed from the airport experience; this type of design policy serves to create further alienation at the airport.

Anthroportscape centric design aims to move away from this model of airport planning. Amenities, concessions, and features provided for the global flow of passengers should also be made available to all people of the city. This democratic opening up of the airport will allow it to be more ecologically connected to the city it serves. Of course one of the biggest challenges with this is security. Already only ticketed passengers are allowed to reach and browse the majority of the airport's amenities, usually at the heart of the facility. Even if non-passengers are not allowed to pass through security, there exists ample opportunity to provide these facilities along the open outer perimeter of the airport. There are a few airports which offer stores and services outside the security checkpoint, but these are still not welcoming to the non-passenger because it is usually a big hassle to park and enter the airport.

Zooming back further, the journey from the city to the airport is one that is not usually designed or planned, in terms of experience. It is usually about developing an efficient high speed highway or rail network to transport people from one infrastructure to another. This type of the development ignores the vast destination potential of infrastructure leading up to the airport. Anthroportscape hopes to address this urban landscape condition, with the same principles of democratic integration. If the airport is to become a destination in the city, the journey to and from it must be an experience as well.

However one of the big concerns with broadening the connection between the airport and city is the further dilution of the city's identity because of the greater influx potential of globalization. This is why resilience is important in maintaining the local identity and culture of the specific place the airport inhabits. One specific example of this is the language that is used in signage throughout this infrastructural corridor. As English continues to dominate all other languages, many countries where English is not the native language, are moving towards English as the dominant language for all signage. In the better cases, local languages are still presented, albeit in smaller fonts. Maintaining local heritage around global infrastructures is a vital ingredient in the resilience of place.

As mentioned, airports are usually connected to the city by primary highways, and railways, but these connections are usually limited in their potential growth. There are limited organic connections to the city from the airport, because it attempts to limit the local flows to it for increased security. However due to the unpredictable nature of city evolution it is important to maintain the possibility for broader connections. Not just in terms of transit, but with local economies, cultural opportunities, and openness to the city at large. It is with this forward looking outlook that the airport follows the sustainable evolutionary pathway and becomes the anthroportscape. This organic connection is epitomized by open ended planning, like living organisms, the airport or building must realize the continual possibility of adaptation and development, this is the view of famous airport architect Paul Andreau. (Edwards, 2005, p. 16)

An example of an organic transportation infrastructure is the Yokohama Port Terminal designed by Foreign Office Architects. It seamlessly links land, sea, and rail through a reprogrammable surface that provides security, privacy, and public space. (Wall, Programming the Urban Surface, 199, p. 244)

Figure 3.4 | Yokohoma Port Terminal designed by Foriegn Office Architects
This urban port structure is adaptable to different programmatic uses. It is full of sustainable elements and also makes these connections apparent to the public using it. It is also democratic in its use and so it is emblamatic of anthroportscape design. *(Images from flickr.com)*

The **anthroportscape** is the

democratic, resilient, organic, and sustainable progressive evolutionary pathway of the airport.

The Anthroportscape replaces the airport

The anthroportscape is democratic in that it is fully open to the city. It becomes a destination not only for passengers, pilots, and workers, but for the whole populace.

The anthroportscape can still maintain its position as a doorway for globalization. However, it is also charged with the preservation of the locale it lives in.

The anthroportscape is organic because it becomes fully integrated in the city's fabric. It does not attempt to isolate or separate, but rather follows a prescription of unity and wholeness.

The anthroportscape organically interfaces between people, airport, landscape, and flight.

The anthroportscape can thrive locally even without air traffic.

The anthroportscape allows nature to filter back into the airport, in order to link back to natural ecological cycles and processes.

The anthroportscape can promote sustainability because of its ability to reach a large, diverse population at once.

The anthroportscape must capture and stretch the human imagination towards a brighter future. Not only for our ability to construct impressive wonders, but to offer the hope of a world harmoniously united through its biological and cultural diversity.

Anthroportscape = Anthro + Portscape / Elements defined

Anthro refers to the human element in airport design. This is reflected through multiple elements, such as human-scale design of the spatial environments as well as the humanness of the interactions.

Anthro is also related to the idea of democracy, in that the airport experience should be an open affair. It should more democratic in its approach in how it treats the citizens of the city it exists in. If the resident of a particular city is not a passenger or does not work at the local airport, then it does not do much for him.

Port refers to the unique nature of airports as gateways. They are the points of exchange in the global flow of industry, information, and people.

Port is also related to the idea of resilience in that it must maintain its form while constantly receiving local and global stimuli. While they are the gateways to the broader globe, they can also be seen as the guardians of local culture and identity.

Scape refers to the urban landscape into which airports plug in. Airport design has been shaped by the natural factors which influence flying patterns, and they have to connect to the city in order to be accessed.

Scape is also related to the idea of organic in that it should be readily adaptable to the needs and conditions of the city. Airports are structures that respond to the changes of city elements, in coping to adapt, they follow an organic pattern of growth.

Anthro

One of the most pressing problems with airports is that they only serve a small minority of the population. Given any city, almost all of the infrastructure and public places are open to the citizens. The airport however, is one infrastructure that does not. For most who are not flying, they either have never been to the airport or maybe only to drop off a relative. There are others who work at airports, throughout the variety of retail and services that are needed. Even though there are thousands of people, it is not exactly a city because of the strong striations between different classes of users.

However they could be opened to more people. Airports today are destinations in their own right, because of the wide variety of non-flight related services they provide from shopping, to museums, business lounges, and a great platform for people-watching and plane-spotting.

In many cities the airport is well connected through public transportation, making it easy and efficient to access.

Portscape

"The way we approach the business of building and what we expect of it needs to be reconsidered. We can no longer afford to read the city as an amorphous stringing out along freeways into conurbations as futurologists once did. The city can be understood only in the context of its landscape, as part of its inalienable region, but also as an entity with one or more designated centers, with marked edges – if only on the map." (Rykwert, 2000, p. 244) Many airports are located on the perimeters of the city making them time intensive to visit, yet airports are usually well connected to public transportation making them easy to access. However in terms of an organic connection with the urban landscape of the city, there are still many more elements remaining. Elements of the city may be heterozygous or homozygous but they are still generally identifiable as part of that city. Usually however, airports might not blend in so well into this mold.

To understand how the airport should be inserted into the urban landscape it is important to map infrastructure and destination. Usually in most cities this will reveal that around the infrastructure of the airport, there are not many destinations, making it a depression in terms of attractors of activity. The airport can now become a forum for art and culture, with museums, libraries, and universities all contributing. For this process to take place however, it is important to fully understand where the airport fits into the expectations and potentialities of the city.

Figure 3.5 | Signs Re - Represent
How does the subway mosaic tile sign of Wall Street alter its strong image?

The same for the Indian educational powerhouse, IIT, how does this street sign in Delhi re or mis represent the instutution?
These urban conditions are important brand and marketing considerations

In connecting the airport to city it is vital to understand all the junctures where the city is understood in infrastructure and to then reconcile any jarring incongruities. For example how does a sign on the NYC subway represent the actual aboveground location? These disjoints serve to further alienate the transitory infrastructure from the prescient city, unless they are fully thought through.

Reconciling the relation to the city

New model of tourism:

Tourism must be guided toward civic life to create a sustainable system of transaction to and from the city. Richard Ingersoll has a model of five ideas to make this connection happen. (Ingersoll, 2006, pp. 63-69)

1. Redistribute the Gaze – cultural and city planners should inverse the emphasis on touristic sites within the city and encourage momentum throughout the periphery instead of just the core
2. Democratic Attractions – when programming cultural attractions looking at marginalized and disadvantage communities for inspiration can provide a wealth of unique ideas and opportunities
3. Making Those Who Profit More Responsible – global multinationals have a great amount of profit to reap from tourism development and are usually not responsible for the maintenance and upkeep of these local resources they are exploiting, so this relationship should be adjusted
4. Incentives for Production – when a community turns its productive base towards tourism based industry it eventually destroys the local economic fabric, so a potentially solution would be to take a portion of tourism related revenue and redirect to sustainable local production
5. Integration with Daily Life – tourist attractions should be integrated with the daily cultural activities of the city so that there is a greater intersection between the two groups of people who would normally not meet

Figure 3.6 | JetBlue goes Green
JetBlue has launched a massive campaign called Jetting, which is about revisioning the enter process and system of flight. With this they have construced a new terminal at JFK in New York City. Their campaign reaches across public spaces and goes out into the city, the top picture shows a jetting advertisement on a public train. This in addition to their online informational campaign about going green seems to suggest anthroportscape thinking. *(image from Jetblue.com)*

These ideas of new tourism can be directly incorporated into the anthroportscape. The anthroportscape builds its connection from airport to city through the new model of sustainable tourism. This model of sustainable human transaction throughout the city is essential to making the airport work in a highly integrated mode of development.

Anthroportscape thinking in motion

In some dimensions anthroportscape thinking has already permeated airport design and planning discourse. For example the low cost carrier JetBlue has recently opened their flagship terminal at JFK in New York City, but they advertise it not as an airport but rather a people port. T5, the newest terminal is actually built upon Saarinen's outdated TWA terminal, and JetBlue seems to be emphasizing the human aspect of flying. Actually they promote their airline, by moving away from flying and calling it jetting, almost hearkening back to the 1960s golden jet age. It is there attempt to inject passion and excitement back into flying and the airport experience. Airport design seems to be gravitating back to a passenger centric focus. They have further extended this airport's presence through city-wide

marketing that attempts to draw people to visit and experience Jetting hub stations. JetBlue is also in a large campaign of ideas and strategies to go green and is encouraging their passengers to do the same. Going green is fundamentally related to cultivating new attitudes or ways of living and relating with the environment. It is both an individual and global movement of care and as a consequence results in a new system of mobility. This movement towards ecological responsibility is increasingly the economically sensible practice as well. Jet blue has embraced the idea of Jetting not just for traveling but for the broader challenge of sustainable living. (JetBlue, 2009)

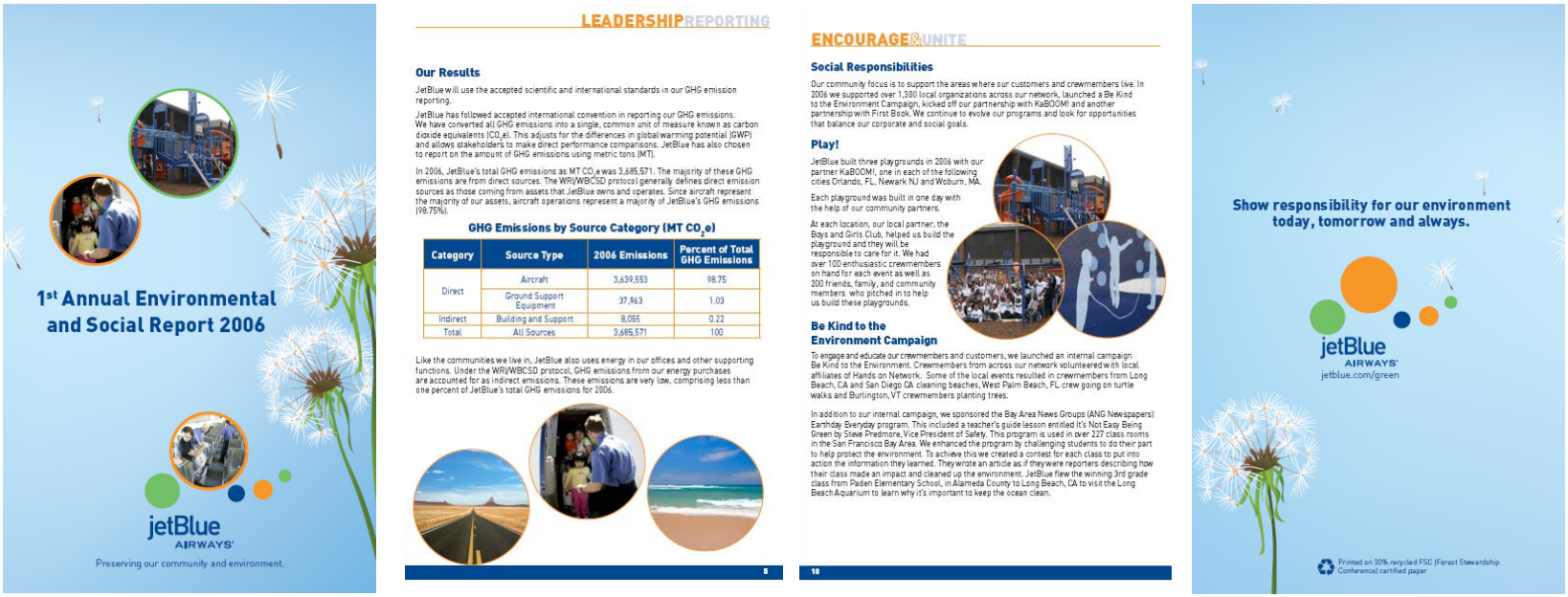


Figure 3.7 | JetBlue's 1st Annual Environmental and Social Report 2006
Large corporations including those in the aviation sector are realizing the fundamental value of environmental thinking and planning. JetBlue is one of the first airlines to release an open publication about its efforts to redue resource usage and promote a more sustainable vision of flight. *(images from Jetblue.com)*

Figure 3.8 | Green Holland Herald
The 2007 green issue of KLM airlines in flight magazine. Airlines are stepping up their efforts on sustainability and most importantly they are trying everything to make their customers more appreciateive of the strategy.

Another airline actively engaged in the green movement is Dutch carrier KLM. On one of their flights that I took in 2007, their in-flight magazine was specially titled the green issue and featured various arguments and problems about reducing the worldwide impact of air travel. It was not meant to solve any problems or present concrete solutions but it was designed as a catalyst for exploring new ways of travel. KLM also announced that 30% of all their coffee served would come from partnerships with the Rainforest Alliance, which works to protect forests. There are critics however, who claim that this is "greenwashing" and that it is mostly a public relations move, claiming that while it is a great initiative it does not really address the broader problem of carbon emissions. (The Times, 2006) The fact that a major airline is openly discussing the negative consequences of flying is commendable. Airlines alone are not in a position to shift the industry but any move they make towards promoting healthy debate over sustainability is a step in the positive direction.

For many cities in the western world, the most important economic developments seem to be happening in ecologically sensitive design, the creation of public spaces to improve social capital, and the development of infrastructure that supports healthy living that is both dynamic and adaptable. Airports are starting to take this leading role and have an even greater opportunity and responsibility than airlines because their business model is not predicated solely on flight.

Figure 3.9 | Sustainability Plan for DFW
Dallas Forth Worth has developed a strong vision for sustainability. They incorporate the airport into the community and even teach educational classes on various environmental strategies *(diagram from dfwairport.com)*

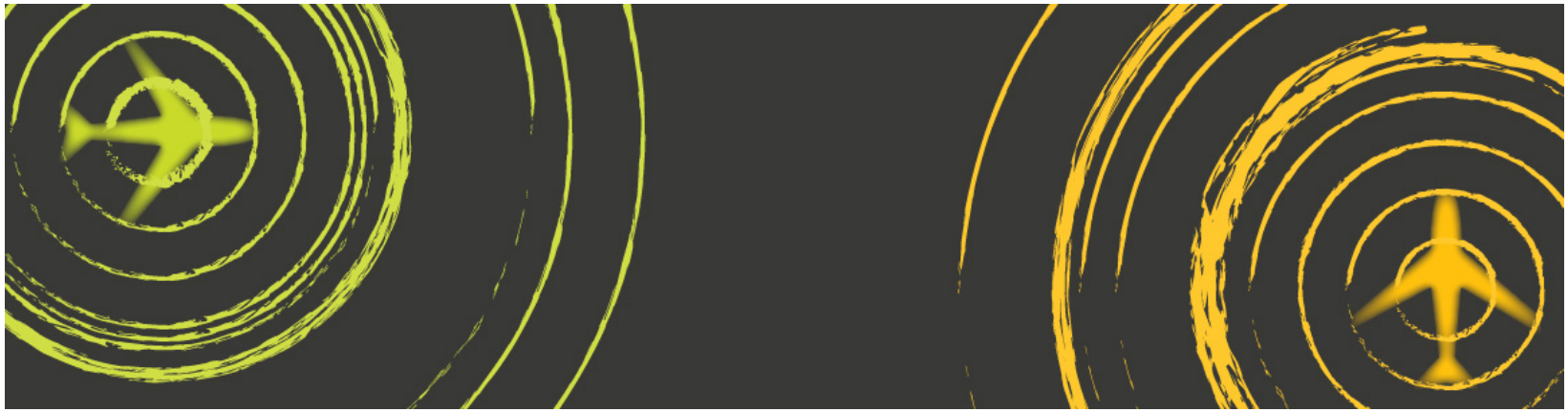
There are many airports building green infrastructural additions such as green roofs or plans for alternative energy. Featured in the latest issue of Passenger Terminal World magazine, the international airport in Port Columbus Ohio is planning to construct a green roof on one of its deteriorating parking garages, but they state that it will be mostly invisible to passengers. (Passenger Terminal World, 2009) This is the problem, sustainable efforts must be made visible to the millions of people passing through, because most people appreciate these efforts and this could further encourage the airport to invest in green infrastructural systems. Sustainability is not just about the built structures but about the social interest, appreciation, and knowledge of how they function.

Perhaps the biggest new airport plan for sustainable development is New York City's fourth airport, Stewart International Airport. It has already been undergoing major renovations by the Port Authority of New York and New Jersey in order to make the facility modern and able to handle additional traffic from New York City. The biggest draw is that they plan on making it the world's first carbon negative airport, whereby the terminals, baggage claim, restaurants, stores, and so on all produce or support green energy initiatives that offset the carbon emissions from flight. It is quite a bold move for an airport to take in promising such sustainable initiatives. However, many environmental blogs believe that this is a public relations stunt, because truly offsetting the environmental damage from increased air traffic is not feasible just by planting trees miles away. Also the airport could exacerbate problems of sprawling development and create

much more damage. (Ashley, 2008) This might be true to some degree but it is a already a big step that the airport is trying to catalyze sustainable thinking. As the airport will reach a very broad base of people, the goal should be to promote education and discussion on these topics and let the natural processes of human democracy figure out long term solutions. The airport can become a catalyst for sustainable urban development.

Stewart International Airport can become a great model of anthroportscape development, it is already trying to identify and brand itself as an airport of its Hudson Valley locale. For example on the Port Authority website for the airport there is a map which features all of the attractions around the airport, but instead of just the usual commercial attractions there are some interesting local additions. After shopping malls the second category of local attractions is apple picking. This was quite surprising to find as it is strongly related to the local food production movement and highlighting this issue at the airport is emblematic of anthroportscape thinking. They also list regional wineries, antique shops, as well as different arts venues. Another positive addition is that they feature bed & breakfasts and inns before hotels, so it was definitely powerful to see the smaller more local lodging highlighted before the larger hotels. Anthroportscape connections are about making local connections from the globally connected airport node, Stewart seems to be following this prescription.

Ultimately the incentives for prioritizing sustainability in a business world will be up to the moral principles and fortitude of the management. An inspiring story can be found in the novel Eco Barons by Edward Humes, which account the stories of millionaires who are investing in the planet without seeking any financial gain. (Seed Magazine, 2009) These are the stories and individuals who will drive top down change which can hopefully resonate throughout the globe. However the movement towards sustainability does not begin or end with top down change, rather it is about the gradual but powerful rumbling of a bottom up movement that works to impact positive thinking and ideology throughout all facets of life.



DESTINATION

4. DESIGN SOLUTIONS: HOW TO CRAFT AN ANTHROPORTSCAPE

The first step in creating an anthroportscape is to reestablish the connection between the city and the airport. The airport must be fully integrated into the cultural, economic, social, and ecological identity of the city. These broad categories of human and natural interaction are what give rise to the particular identity and character of a city. As articulated by noted planner Lewis Mumford, the city is the theater in which all this action unfolds and is presented. Many of the current problems cities face are due to the negligence of the social, human factor, in different planning strategies. The strength and attractiveness of cities is not derived from its physical form but rather mainly its social richness and institutions. (Mumford, 2007) The city and the airport find themselves trying to reclaim the human element, at the early stages of the 21st century. As they are both trying to reach the same goal, one of their first steps should be, airports fully opening up to the cities which they serve. Airports and cities must become one with each other for future success and sustainability.

Figure 4.1 | Downtown Newark to International Airport
How does the urban core of the city respond to the global core of the airport? Can they work together to form a more sustainable model of urban development? The city is not the most prosperous or promising place, but it is still a major city and its airport serves as a major hub for the New York City area. The transitory arterials between the city and airport (middle picture) are somewhat dead spaces are there is no real place for resting or relaxing, just miles of highways. These need to be a prime focus of human scale development in connecting the energy of the city and the energy of the airport to make a more sustainaable, resilient, and habitable Newark.

A / AIRPORT & CITY

The airport corridor as an urban ribbon between city and airport is not a new typology, and neither is the airport city. However these are ideas that have not been thoroughly investigated as the actual terminal design. The relationship between airport and city follows a typical prescription: the airport leaves the city, the city then follows the airport, and finally the airport becomes a city. (Shaafsma, 2008)
In order to understand this link, the physical means of transportation from within the city to the airport become important to understand. Most airports are located on the fringe of their city, because they need open room for flight paths without tall buildings blocking the way. As a result they require long highways and train lines to reach from the city. The journey to the airport is usually planned by engineers or planners with an emphasis on how to provide the most efficient and expedient connection to the airport. However it is not often planned with thought to the psychological conditions of passengers who will be speeding along to catch a close flight. Or how it is often the first pathway a new visitor will experience within a city. Transportation to and from airports is a vital but neglected part of the design chain. (Edwards, 2005, p. 43)

In fact this is the motto behind Frankfurt Airport, where they believe that the best airport is one where the passenger seamlessly enters into the airport experience. They mainly define this as the connection where rail and airport are connected so that traveling to and around the terminal is expedient. This leads to shorter waiting times, and more convenient and reliable traveling. (Frankfurt Airport)
They make a good point about a strong passenger transport system for linking the large terminals of the airport, but this is only a small part of the story in connecting the airport back to the city.

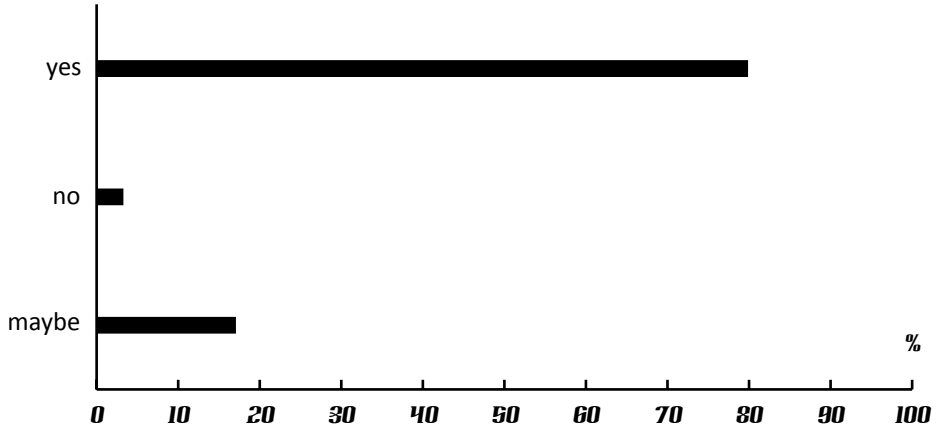
The physical connection is a strong player in determining the nature of connection between airport and city. There are numerous roads, rails, and other lanes of transport that all join the airport and city, but they might not be designed in a way that makes it a great ex-

perience. Or the journey from the airport to the city might not be designed to properly set up the anticipation building up to the city. Stansted, London's third airport is located north of the city and is connected by an express train. However looking at online video about it, the description indicates that it is a very boring experience. (Google Video, 2006) This is obviously just one opinion on it, but the fact that someone took to time to upload this to the internet and that it is being watched by others, is somewhat of a clue to what people are thinking about this express train route.

1. Home to Airport
2. Car/Parking to ticket counter
3. Ticket counter to security checkpoint
4. Security Checkpoint to boarding area
5. Boarding area to flight
6. Take off to landing
7. Gate to Baggage Claim
8. Airport Exit to journey home

The first part of the journey that does not receive enough critical through is the journey of the passenger to the airport. In trying to reach a flight, the passengers faces a series of decisions, such as what mode of transportation to take, how early should they reach the terminal, how much luggage can they bring, will there be additional security, can they find parking, and so on? Depending on the individual these are all issues that can manifest themselves as early as a week before the journey to just hours before. These are really critical issues for the passenger and often there isn't a clear path of information. Information is provided by the airport as well as the individual airlines, or even other entities, such as travel agencies. Sometimes these groups might provide different information, leaving the passen-

ger unsure about the specifics of traveling. I think the airport should be the sole authority the passenger uses because it is the strongest physical entity. The airport is the building which unites all the separate airlines and agencies and ultimately controls the flying process.



Q31: Do you think airports should provide information about what to do in the city?

Q32: Do you use the airport to find what you can do in the city?

Figure 4.2 | Contradictory Answers
People think the airport should provide information about what to do in the city but then most people either only use it sometimes or not much at all

The next step is transportation to the airport. At many East Asian and European airports, there are direct high-speed train connections from multiple city locations to connect passengers. However, in North America, and dominantly throughout the world, the automobile is the largest mode share for traveling to the airport. This includes various categories, there are public services such as taxis and airport shuttles; or sometimes people will arrange for rides with family and friends; and finally is the personal drive to the airport. Each of these conditions leads brings up a plethora of design questions.

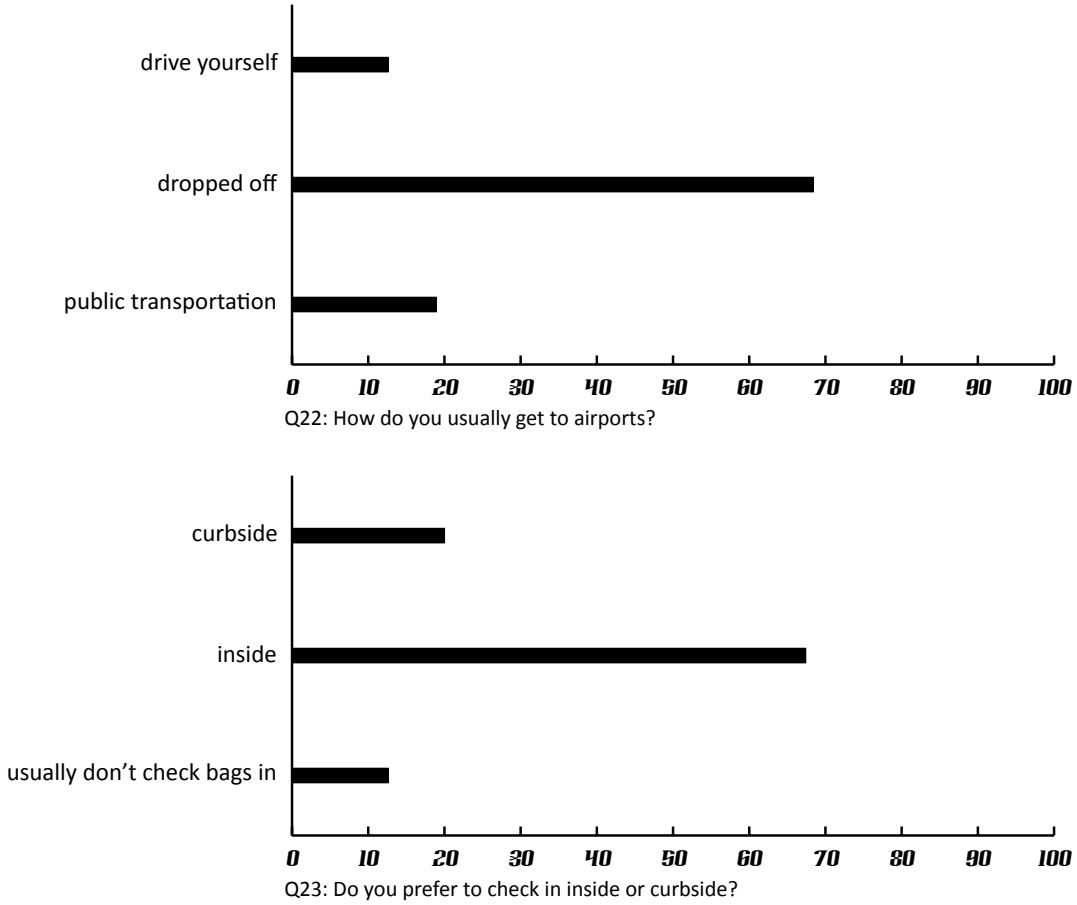


Figure 4.3 |Traveling to Airports
The majority of respondents are dropped off and then prefer to check their bags inside, so what does the person dropping them off do?

Infrastructure as Destination

"When Infrastructure is treated as art, it enforces the idea that a place has meaning." (Ingersoll, 2006, p. 125)
This was the premise and motto behind the design of this artistic bus station in Hoofddorp, The Netherlands. It was meant to be both engaging and functional and this multiplicity of function is emblematic of the most innovative ideas. Interestingly Hoofddorp is adjacent to Schipol Airport Amsterdam, and so maybe these artistic transit spaces could be integrated into a broader anthroportscape plan of the airport.

"A bus stop is so formulaic that it lends itself to acts of semiotic insurrection." (Coates, 2003, p. 297) Not in the case of Hoofddorp, but most all other bus stops fall into the formulaic mold. Roads, water pipes, sewage systems and so on are some of the most crucial elements of making our cities run, yet they are also some of the least appreciated urban forms. (Plan Philly) Typically when infrastructure is mentioned it conjures up images of large construction projects or miles of cables, or something else, that is not very human friendly. Infrastructure is also something that is constantly undergoing repair due to the nature of its use. The constant repairs and detours that result from road construction can actually cause psychiatric problems with a city's residents. According to the Boston Globe, it is not just tempers from road rage, but the psychiatric worries of people in Manhattan when they know about a new bridge being constructed to New Jersey. It is the psychiatric agony of infrastructure. (Boston Globe, 2008)

Infrastructure might be inflicting psychological damage, but most citizens realize that it is a necessary condition that they have to deal with in order to make the city function. The common view is the utilitarian nature of infrastructure is unquestionable and that we have already determined the best ways to implement it. Recently, however infrastructure is increasingly being understood in a holistic context. Janette Sadik-Khan the commissioner of NYC DOT remarks that we need to move beyond looking at streets as simply utilitarian corridors and instead look at them as great opportunities for making public space. (Sadik-Kahn, 2008) Instead of seeing infrastructure

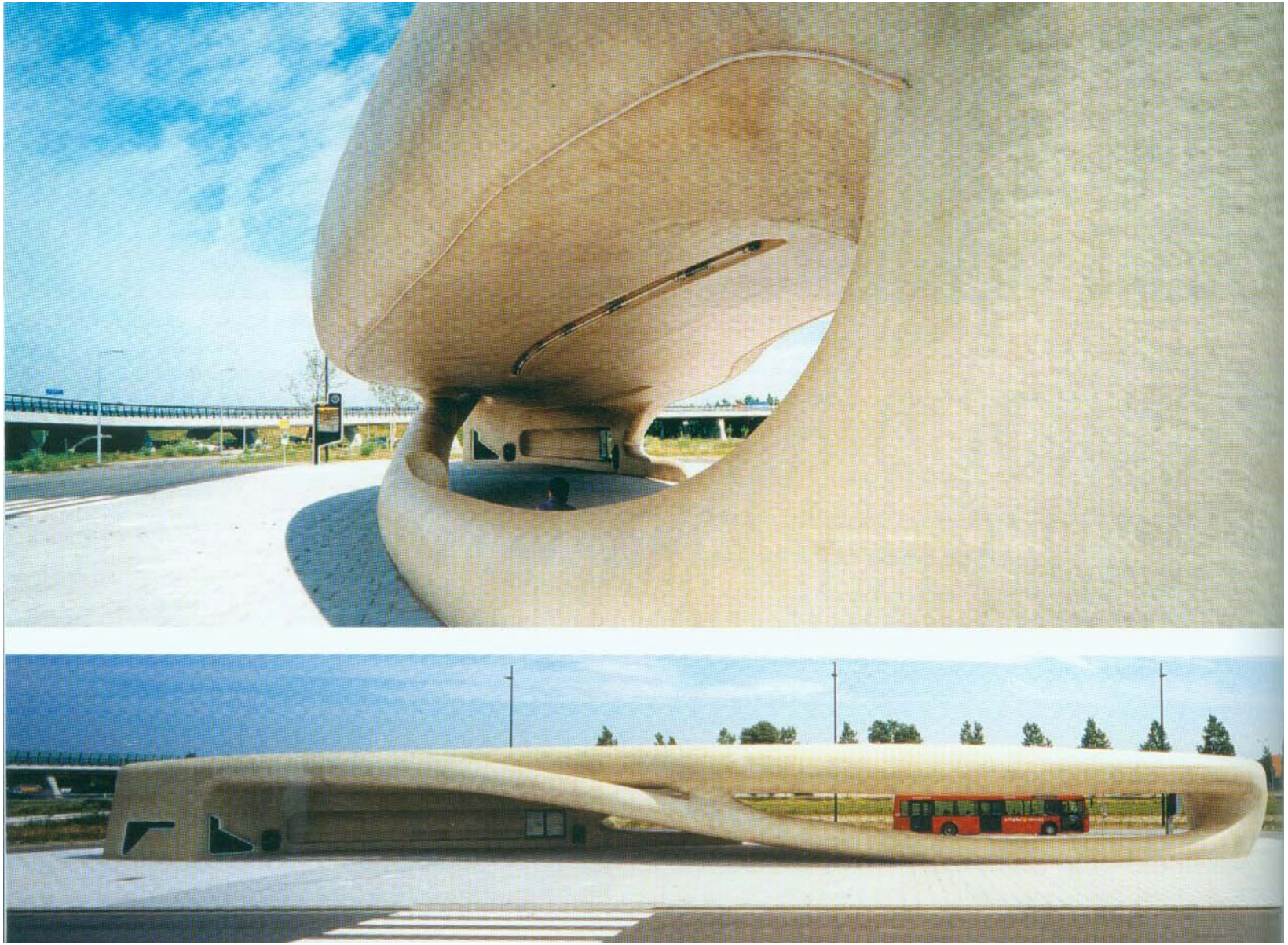


Figure 4.4 | Infrastructure as Art
Hoofddorp Bus Station located nearby Schipol Airport Amsterdam *(Images from Topos)*

as single function and isolated from the realm of public activity it is viewed as one with the city. This paradigm shift is visible throughout many cities, especially in relation to their streets. Traditionally just viewed as arteries for transportation, many cities are radically re-envisioning their streets as public places for dwelling and spending leisurely time. Great public space is a destination as people congregate to relax, work on creative pursuits, mingle, or a number of other things. Destinations in a commercial sense are about shopping and spending time and money. Then there are cultural destinations such as museums, libraries, and higher education institutes that promote a different kind of cultural activity.

Transit Oriented Development

Transit Oriented Development (TOD) is emblematic of this new type of thinking. It is high density mixed use residential and commercial development that is located along transportation corridor nodes. The mixed use nature of this kind of development is very important in helping establish it as a destination along a thoroughfare. Coined by the urban planner Peter Calthorpe in 1993, it is rapidly becoming an accepted model of development throughout the world. (Calthorpe) It is an attempt to blur the lines between destination and infrastructure. However, to take this type of development to the next level, it is important to include stronger cultural nexuses such as museums or libraries. This is happening along the Hudson River in Beacon, New York. A stop on the railroad north of New York City, Becaon has embraced transit orientated development and has just instituted a museum along the rail corridor, called DIA: Becaon. This museum is visible from the rail and is an attempt to organically connect the city with the infrastructure through a strong cultural node. More importantly, the museum is a dedicated to understanding and protecting the world's rivers and estuaries. (Gensler)

The Chicago Loop, one of the iconic images of Chicago is a massive jumbled spagetthi-like series of highways. Even though they have a name like a typical destination or tourist site, one cannot actually go to the loop, it's simply a thoroughfare for passing by. However recently, the architectural firm Gensler, has recreated the Loop as a destination. In their own words, "To give the Loop a destination value

that matches its global name recognition, a pivotal block is being redeveloped there as a mixed-use center that enlarges the Loop by reconnecting its retail heart to the theater district to the north." (Gensler, 2009)

Transportation infrastructure is being repurposed all over the country and the world. From our streets, to highways, railroads, shipyards, and even airports there is a new consciousness about how we should better design these spaces so that they are fully integrated into the fabric of the city and not just empty pathways. The featured article in the February 2009 issue of landscape architecture magazine is about a pedestrian bridge crossing over a highway in Vancouver, Washington. It is not simply just a bridge but a greenroof that employees native plants, local artwork, and is a tourist destination. Designed by Maya Lin and the local tribes and civic groups of the area, the land bridge has been a resounding success that has both practical and environmental value. (Enlow, 2009) Another highway overpass treated as sculptural art is the Craigieburn Bypass in the northern suburbs of Melbourne, Australia. The freeway bypass uses sculptural walls to block noise, but these also act as gateways into the pathway. (Rockport, 2006) They are both examples of infrastructure and destination blurred. [need to add both figures]

Gensler is also a leading architecture firm in transitioning to design airport infrastructural spaces. They have worked with Changi Airport Singapore in the past and are currently working on the new JFK terminal 5 for Jet Blue, as well as the new metro north terminal in Detroit. In terms of blurring infrastructure and destination, Changi works to really make people dwell. From a blog about Asian hotels and airports comes the following insight: "The secret is simple: while other airports act like fast food outlets and wish to process as many passengers through its gates as quickly as possible, Changi acts like Starbucks, inviting visitors to stay awhile and enjoy the many amenities within its halls." Further down in the comments section of the same article, Michael says, "The Chiangi is simply awesome. Incredible how clean, friendly and well designed this airport is. Makes you want to just come, bring a book and hang out." (Tan, 2008)

Transit oriented development applied to airports, makes them places that are more multifunctional, beyond just the standard functions for which they are built. "Like the better railway stations, they can be places to visit for a beer or a meal or for a look around the shops, without this seeming a perverse rejection of the traditional city." (Pearman, 2004, p. 195) There needs to more work in this area of airport design because many of them already realize that there is not enough planning to effectively integrate the airport into the city. (Edwards, 2005, p. 21)

The airport sets up with the experience of visiting that city or the region. For example, Ben Gurion in Lod Israel is the main point of entry for everyone into Israel and so its design mission is that it must be designed as the gateway to the Holy Land. The landscape architects provided a unique gateway that presents a condensed version of the landscape of Israel. They also had the challenge of not using symbols or themes which could be off-putting to various groups of people in this highly sensitive region. (Aronson & Aronson, 2005) The final landscape design of the airport complements the terminal well and makes it clear that that the physical iconographic landscape of Israel, from Tel Aviv's coast to Jerusalem's mountains are captured. (designboom) "Tel Aviv - it had pieces of the country in the airport (like stone and water) and it smelt of Israeli pride. Very welcoming." – Survey Respondent (Q19 R74)

The airport journey

"I do not like airports. I am reasonably comfortable in them, but from the car to the gate is always fairly rushed and hectic and unpleasant." - Survey Respondent (Q18 R86)

When people reach the entrance fringes of the airport usually they are given quite a bland scene of drabness. This was the impression that Ken Parker had of the Brisbane International Airport in Queensland Australia. This airport is the gateway to this region of Australia and it did not do much to reflect or celebrate that along the main Airport Drive. He reflects that this is an easy place to imagine and feel

the non-place type theory always introduced about airports, always citing Marc Auge. (Parker, 2002) Interestingly this Airport Drive is also the subject of a new landscape architecture masterplan to give this part of the airport more character and identity and make it an interesting part of the overall airport experience. This is of course after Parker had experienced it.

The Brisbane airport landscape plan is interesting because it includes outdoor places for pedestrians to explore. Many airport landscapes are usually decorative and do not provide pedestrian access. An important part of developing an anthroportscape is to make this landscape an integrative element of the connection between airport and city. It is the welcoming step in both directions, whether you are arriving or departing. It is also the part of the airport that could be easily opened to all instead of just those ticketed passengers.

Small landscaped pocket courtyards along the edges of the airport provide a nice respite for passengers as well as meeters/greeters. They do not have to be elaborate but should follow the design principles of William Whyte, such as providing variable seating, protected views, and relaxing shelter. This accessible outer courtyard of airports provides a great buffered entrance to the terminal. These outdoor elements can also be a way of instilling a sense of place through the use of native plants and other interesting local natural features. To make a significant impact however, they should be made explicit to the flow of people who would otherwise just graze through on the rush to reaching their destination. These outdoor elements can be the first step in slowing down the tempo of the airport and creating more opportunities for relaxation. Following this experience of the exterior shell what is the transition into the airport. Is there a big discontinuity between the outer visual and inner experience? Usually there is a full integration of architectural style throughout the terminal, but some designs are made particular for the outer visual appeal rather than the inner experience. Denver International Airport uses a unique tent canopy structure on the outside which is carried through the interior to some degree. However it seems to be a mostly bland airport interior, at least in comparison to the striking exterior.

Figure 4.5 | Albany Airport Entrance
The exterior envelope is welcoming with signs and pocket parks

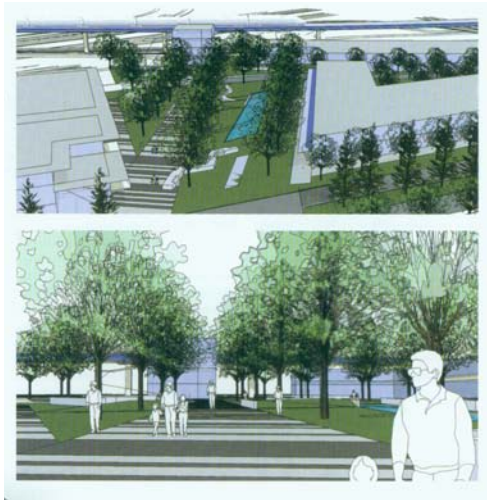


Figure 4.6 | Brisbane Airport Landscape walkways
Landscape Masterplan for Brisbane Airport *(Image from Topos)*

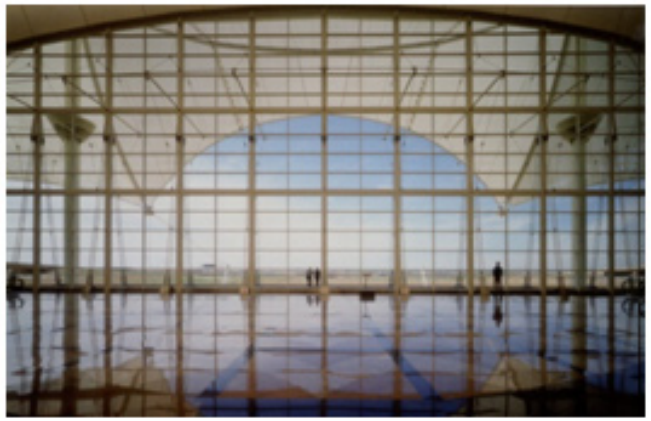


Figure 4.7 | Transition from Exterior Image to Interior Experience
Denver International Airport *(Images from daab Airport Design)*

The idea of an airport differentiating itself from the global milieu of modernist architecture and using its local city as inspiration has been an increasingly analyzed topic. The idea of an airport being a product of a local region or city was the subject of a recent Business Week article entitled, Airport Reflections. Here the article not only highlights some of the specific designed elements of the airport that reflect local identity, but also the different customs and traditions that make an airport feel unique along the global network. The new T5 terminal at Heathrow is chided for perfecting the "British art" of queuing where the whole airport seems to force passengers into long lines. Sao Paulo, Brazil's Guarulos airport struggles to keep up with demand, reflecting the transitory nature of the whole country currently. Charles de Gaulle in Paris reflects beautiful French architecture and style, but it also places form over function making the airport difficult to navigate and travel around. Finally, the article's author returns to his hometown airport of O'Hare in Chicago. He believes that O'Hare is a no-frills airport that gets the job done even with all the difficult weather conditions the city faces, reflecting Chicago's nature as a city that works in spite of problems. This leads the author to his conclusion where he believes that airports should remain purely as airports and not include other functions which get in the way of expedient travel. (Sirkin)

This reflects the business users' mindset, but there are so many other groups of people using the airport and additional functionality makes perfect sense. The size and scale of airports is so large that they are on par with cities and should be treated as such. (Sudjic, 1993) Cities are the opposite of single function entities and airports should incorporate more function if they want to be like cities. However it is not a goal that is incompatible with providing streamlined passages for the harried traveler, it just requires a layered approach to the design and planning of airport terminals. Different functional elements can be clearly delineated to help create hierarchical efficiency in the airport, while at the same time they can be integrated so that the airport is whole. For example, when placing stores and shops along main thoroughfares, they can be distracting and slow down someone who is trying to rush through. Although airports do this to maximize the chance of making profit this strategy does not always the best environment for the passenger. Ultimately however, the design should reflect the local identity, values, and beliefs of the city and the region in which the airport is located.

Architecture Style for Achieving a Sense of Place

"Architecture especially public architecture, is a potent visual symbol; as such it is often used to manipulate the image or identity of its patron. The architectural style of public monuments shows how their patrons wish to be perceived by others, in the same way that official portraits are intended to project a particular image of the subject." (Hasan, 2001) Hasan is speaking about the architecture of Mosques and how they were used to project an identity of a religion in a region dominated by more ancient Buddhist and Hindu temples. This same idea applies to the modern public buildings of today, namely the airport, a global ubiquitous building, that tries to project an image or identity of its region. One of the strongest connections between city and airport can be made through the architectural style and various design typologies employed throughout the airport.

"Belief in the significance of architecture is premised on the notion that we are, for better or for worse, different people in different places – and on the conviction that it is architecture's task to render vivid to us who we might ideally be." (Botton, 2006)

This notion of imbuing an airport with a sense of place that reflects its surroundings is one that is perhaps best epitomized by the new terminal at Madison, Wisconsin. The Dane County Regional Airport has been undergoing a series of renovations since 1998, and the most important driving theme has been giving a sense of place to the airport and to really tie it into Madison and the Midwest. The inspiration was local architecture, native landscapes, and place specific connections. The design is a uniquely Midwestern American style of architecture, it is based off of Frank Lloyd Wright's Prairie School. In fact Wright's house is only 35 miles away from the airport and so the design details throughout the airport are based on that style. Every ticket counter, staircase, wall panel, and fixture has been carefully designed to create the evocative character of the region. (Thomas-Emberson, 2007, p. 58)

Finally another aspect of Madison that is particularly exciting and really makes the airport local, was a program whereby all contractors working on the airport had to come from within 60 miles of the airport. This not only boosted the local economy in providing numerous jobs, but was also a goodwill gesture between the large airport and a surrounding community, two things which don't always mix. Even more interesting however, was the fact that local artists were allowed to work hand-in-hand with the architects in designing such things as structural columns. This created a unique flair and style that was unique to that region and particular city. This is a really important step in giving the airport a sense of place, something which is so necessary in place that robs of your sense of time. This strategy was similarly used in Barcelona as well, and a strong healthy partnership developed between the city and the airport.

This local connection can also be more subtle, instead of using direct images of what the region looks like, there could be details imbued through either the architectural style, or building materials. For example the Teutonic, high-efficiency design, common throughout Germany, is a staple of the airport at Frankfurt, with its glass lines and metal framework. In Oslo, Norway Gardermoen airport, they use large timber beams throughout the ceiling. These materials create a sense of place, not only because they are local, but often because they are unusual at airports, where it is usually glass and straight edges. Another example that employees such a strategy is Albany, NYs international airport, which uses a great deal of brick throughout its terminal. This is a unique material to use in airports, it works well to create a distinctive location and one that becomes instantly memorable, simply through its building material, among other things.

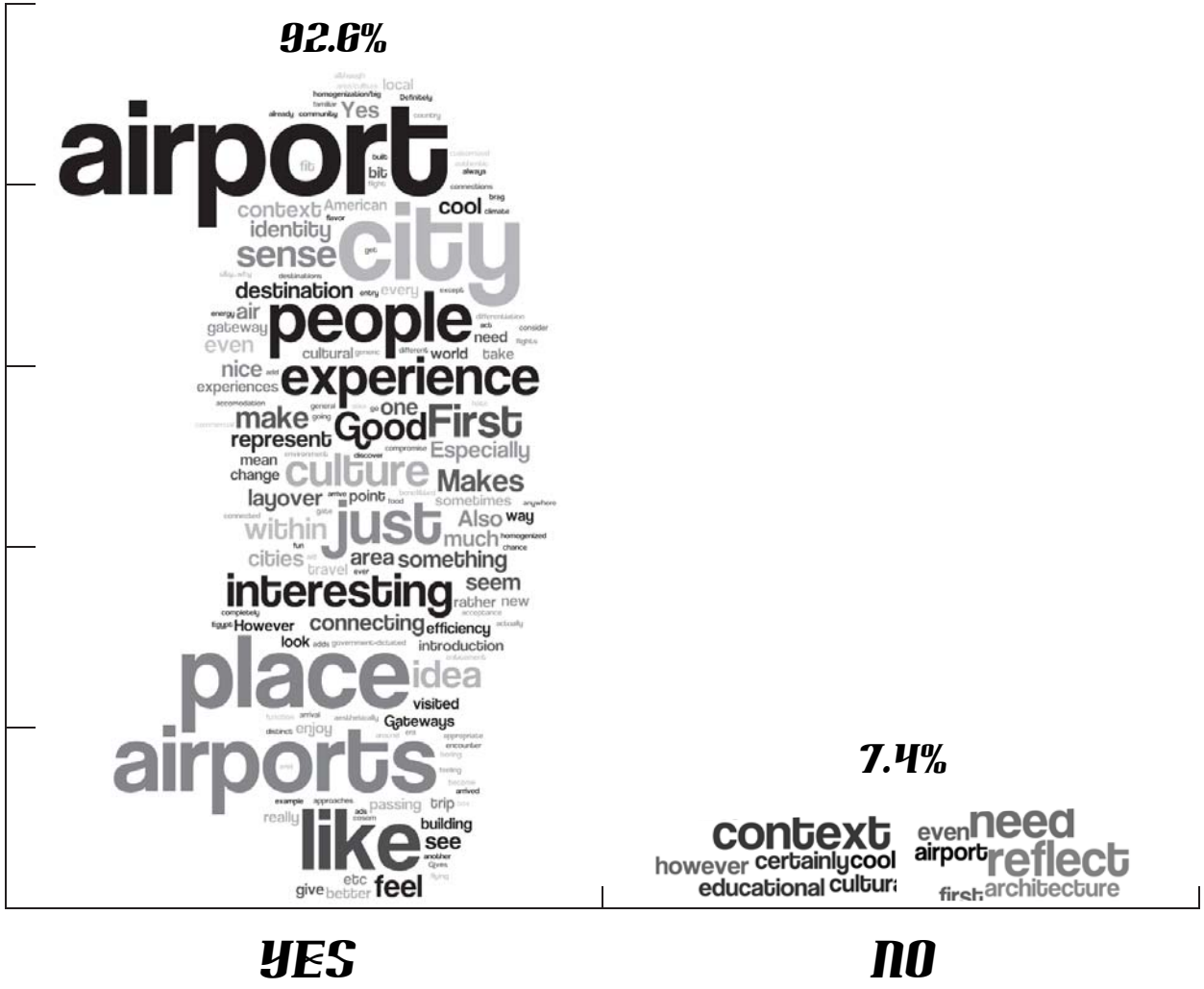


Figure 4.8 | Survey Q47: Do you think airports should reflect the local architecture, culture and customs of the city or region in which they exist?
THe wordles indicate bar heights and they are comprised of responses that either said yes or no

Figure 4.9 | Cultural ceiling design in Delhi
Ceiling design in Delhi Airport that is reminiscent of the Chakra on the Indian Flag

Creating a unique architectural statement with airports was the driving force behind many projects of the 20th century. Worldclass superstar architects were hired to make distinctive buildings, and they often were very special. However, the challenge of design and architecture at the beginning of the 21st century is more complex and requires a broader array of people working together collaboratively. There is still room for the visionary architect to project a singular idea, but this must be tempered by others working closely on the process from the outset. There is still definitely a need for bold visions, because otherwise airports designed by a consortium or broad collaboration can turn out to be soulless or idealess b/c of the nature of the design process. This is the major criticism of the new Athens airport, which was built in time for the 2004 Olympic Games, it is fully functional, efficient, modern, but lacks any sort of emotion or evocative ability. (Pearman, 2004) To build a unique architectural statement is not an easy feat and really requires context sensitive understanding.

Connect to institutions/museums/ city destinations

One strategy for connecting the airport to the city is to link with more of the established organizations and institutions of the city, such as museums, social organizations, sports teams, and so on. This has already started to a small degree at some of the worlds more premier airports, for example there is a mini Rijksmuseum at Schipol in Amsterdam.

Figure 4.10 | Placemaking in Amsterdam
Mini Rijksmuseumand Holland Casino at Schipol in Amsterdam

Perhaps if these institutions and groups don't actually come into the airport, then how do we depict them and create an image of the city at the airport. One example can be found at the newly renovated Austin-Bergstrom airport, where local scenes of the city are painted throughout the airport. From the ticketing counter throughout the terminal there are paintings of local scenes. These remind people where they are leaving, and where they are coming to. Advertising local institutions is another strong way of tying the region into the airport. For example at Newark's Liberty airport, Terminal C, there was an ad for the NJIT University and this made a strong local connection in my head pinpointing my location. I was only there on a transit stop from Ithaca to Delhi, but for this interstitial time, I was in New Jersey.

Food and Language as Cultural Waypoints

Airports have dramatically been expanding their culinary selections in recent years. During the 1990s when most airports opened up to market retail prices (airport design&planning) they were filled with many of the chain food stores found in most malls throughout America. Recently they have began to create more exclusive culinary experiences that are really evocative of that particular city. This is a way of introducing a new visitor to that city as well as providing a departing passenger a final hometown meal.
These were important considerations for the company HMS Host when designing the airport food experience in lounge 1 of Schipol Airport in Amsterdam. The two final restaurant designs they chose both allowed for a broad passenger demographic while strongly displaying locale delicacies, they were named 'Het Paleis' and 'City Spirit'. (Thomas-Emberson 142)

Language is a very important and strong way of linking the airport to the local culture of the city. This includes both the spoken languages throughout the terminal as well as the languages used upon the signs and the hierarchy of importance in which they fall. In the previously mentioned Business Week article, Beijing's new airport is criticized as being a modern glass building, without any sense or style of China, besides perhaps the signs which have Mandarin on them. (Sirkin) Signage is probably the most significant area of the airport in which the language can play a role for promoting a particular identity of the city.

Perhaps the most recognizable airport signs are the yellow background, large black letter signs first introduced at Amsterdam Schipol airport. These were designed by the firm of Paul Mijksenaar to be easily identifiable, readable, legible and informative. They have been adopted at many airports around the world and Mijksenaar's firm has used them properly to help alleviate wayfinding issues.

However, as good as they might be, universally implementing them throughout the globe might not the best strategy for creating a sense of place. In London, for the signs at Heathrow, the process for choosing the font for the signs was pretty exhaustive. The goal of the designers was to find a font that was both legible at a distance but also had a sense of human character and warmth.

Figure 4.11 | Familiarity and Distinction through Signage
Signage designed by Paul Mijksenaar at both Schipol and Newark, they are similar yet distinct

For creating identity and displaying local tradition, the language of the signs becomes very important. It is not just what languages are used, but also the hierarchical order they are placed in is significant. Even more telling is the languages that are left out in favor of others. For example at this barking sign in the arrivals maze at Philadelphia's International Terminal, there are only 4 languages used. To those who speak one of these languages, it might be a gesture of care and thought that indicates America's welcome. However, to others it might seem that they are being neglected in favor of more popular languages, so they might feel that either all languages must be represented or just stick with the universal national language of English.

America faces an interesting problem with choosing languages because of its different regional immigrant populations. Other countries, whose national language is not English, face a very testing challenge. As English has quickly become the international language of commerce, research, travel and so on, it is often times being used at airports in place of local languages. Another trend or solution is to use pictograms that rely information and let them take the place of words, or complement them. These work to some degree in airports, because there is a close knit group of fairly internationally understood symbols, but they are still not clear enough globally to replace the written word.

Figure 4.12 | What languages should be used?
(left) Philadelphia features English, French, Spanish, German & Italian
(right) Chennai has Tamil, Hindi, and English

One of the interesting examples I remember about multilingual signs was at the Detroit airport, where the signs are in English, Spanish, and Japanese. I could understand why Spanish was used as it is quickly spreading throughout the United States. I did not however understand why Japanese was featured in Detroit, in the center of America, very far away from the Asia. Only recently while working on this thesis and talking about it to someone did I realize that it was because of the auto industry. Detroit at the heart of the American auto industry probably has significant visits from Japanese Businessmen representing the Japanese auto-industry and this made it clear why the airport should welcome the Japanese to Detroit. It is a unique byproduct or in some ways a feature of globalization.

A broader approach to cultural identity

Repeatedly it's the airports of east Asia that receive the best airport awards. Also on online forums and blogs, it is these same airports that constantly receive praise. For example, Changi airport in Singapore has won the number airport awards consistently. Changi has many positive attributes to it, but some of the features that make it unique and perhaps so successful is its embrace of Singapore. Throughout the airport, there is a nature trail that highlights the local nature and vegetation, providing an instant and real connection to the surrounding city, something that is usually absent from many airports.

Figure 4.13 | Changi Airport Singapore
Changi has a series of nature trails and this is one tactic that it uses for local identity it incorporates local plant material

Furthermore to promote a connection to the city, they provide have a free bus tour for passengers with at least five hours to spare. (Changi Airport) This is quite an incredible feature for allowing passengers who would normally just view the airport as a hub for their connections now begin to see it as a destination on its own, and might be more inclined to visit the city again. There are many challenges in allowing passengers out into the city, and Changi does it well, but it might not work in all places, especially if the airport is too far away from the city. There are alternatives however, with modern information technology, maybe it is possible to begin to simulate the experience of being in the city without actually leaving the airport. This is an idea that is embedded in the City Tunes project by Matt Weenig, using a portable mp3 player it would be possible to download a 15-30 minute introduction to that particular city. (Weenig) It is just the beginning of the burgeoning field of location based information technologies.

C / EXPOSING ECOLOGY IN THE AIRPORT

“Despite the fact that airports create some of the most anonymous zones in the world, it is impossible to isolate any airport from the ecology of its environs. The ecologies we are invoking here are not limited to some idealized notion of ‘nature’. As airports increasingly become metaforms, insinuating themselves into urban infrastructures and geological/botanical landscapes, we prefer a more generalized notion of ecology that recognizes all manner of topological connections that may exist across a range of systems. As Felix Guttari notes in The Three Ecologies: Now more than ever, nature cannot be separated from culture; in order to comprehend the interactions between ecosystems, the mechanosphere and the social and individual universes of reference, we must learn to think transversally.” (Fuller & Harley, Aviopolis, 2004, p. 105)

Figure 4.14 | Art and Geology in the airport
Robert Murase’s sculptural landscape element for the Seattle -Tacoma airport is brilliant in its simplicity but has a powerful message underneath. The airport functions with the use of numerous resouces and usually these are masked, they need to be revealed so that people are concious about the global impact of their decisions *(Image from LANAR 524: History of American Landscape Architecture at Cornell University)*

Nature in Airports

What is nature and how do people define and understand it? Some have suggested that nature might possibly be the most complex word in the English language. It is a very dense concept which has a myriad of meanings depending on the framework it is being analyzed in. There is no general consensus across any demographics on how to value and understand nature. "Nature is variously seen as a locus of resources; a site of biodiversity; a source of identity; a repository of spiritual values; an object of state regulation and control; a site of alternative visions of development; the embodiment of various institutions, practices and traditions; a social construct; a site of struggle; a means of healing and personal liberation; and so on." Perhaps the one idea that binds nature together is that it is a force beyond human action. (Cock, 2007, p. 24) In application to the airport, living organisms other than humans are what can be defined as nature. This mostly refers to plant species they provide aesthetic decoration as well as numerous functional benefits. They produce oxygen, might clean the air, and also provide a connection to the outside world in a building that is so tightly regulated. Either way, they are vital to the success and performance of an airport so need to be incorporated from an early stage and not just planted as an afterthought.

Figure 4.15 | Planters in Airports
Planters are ok than no plants, but this indicates that there was not a holistic plan to implement nature into the airport
(left to right) Philadelphia, Delhi, Ithaca

At the beginning of the 21st century we are still very much a society of consumption and materiality. For many happiness and satisfaction is still strongly driven by gaining wealth and purchasing more expensive goods. It's a symptom coined Affluenza by David Wann. (Wann, 2007) This process of constantly purchasing and living materially has put a huge strain on the environment as we constantly have to dig up new resources to make goods for consumption. (Leonard) This is a process that is dramatized and held up to high esteem by the current paradigm of airports. They are monuments to global travel and are havens of shopping and material consumption. Airports are nodes of consumption.

However, what has been an amazing testament to the ingenuity of the human race is the recent global environmental awareness movement. It is a force that is non-partisan, non-religious, and non-divisive and is about humans living together sustainably in shared harmony. (Kidner, 2001) So where does the airport fit in at this critical juncture in humanity? Can the airport actually embrace sustainability and ecology? I believe they can, they have always attempted to elevate the human spirit and imagination to think of a better future. Then shouldn't airports now display and promise that bright green future of sustainability?

Bioregionalism in Airports

"All goods necessary to sustain human lives are produced. Water, food, clothing, housing, even air, undergo a production process involving the extraction of raw materials and their subsequent transformation through human labor." (Kaika, 2005, p. 30) Most people do not visualize or even think about understanding the production chains that are involved in producing these goods. Anthroportscape thinking is strongly centered on people becoming connected back to the steps of resource production instead of just consumption. Bioregionalism is a multidimensional term but ultimately it is about connecting the local resources of a place to people while espousing an identity or image to that region. It is about local culture and the unique physical, ecological, and historic aspects of the area. (Slow Movement, 2009) The airport is intimately tied to its bioregion because of the resources it requires to operate. However, it also part of the global

aviation network of flows, and this is what is usually exposed to the passenger. Airports and local communities usually collide because the airport sucks up resources in exchange for pollution. This friction is difficult to mediate, but airports should expose the local resources to the millions of passengers who pass through without thinking about the place and communities around the airport. "Often it is the sheer ignorance of the ecological process that is at issue, the lack of understanding that we are part of nature and that we violate her balances at our own risk." (Halprin, 1969, p. 114)

Exposing Resource Usage

"A roundtrip flight from New York to Los Angeles emits more than 2,000 lbs of CO2 - about a third of the amount a hybrid car emits in an entire year!" (Carbonfund, 2009) What are the resources that the airport consumes? The process of flying consumes a hefty amount of jet fuel. In the United States, the largest consumer of resources per capita, jet fuel is the third highest oil product in demand. (Energy Information Adminstration) Directly related to the consumption of fuel is the large amount of CO2 emissions. The expulsion of greenhouse gases from air traffic and airports is significant in quantity and more so because it is released at higher altitudes. Other waste from the airport is significant as well, the amount of plastic packaging, paper tags, baggage claim papers, and other general rubbish is used in large amounts for the functioning of the airport. Plastic use is perhaps most starkly highlighted by the global expansion in bottled beverages, specifically bottled water. Water is increasingly becoming the most pressing resource to protect and save. With global warming and other climate change scenarios, world cyclic systems such as the water cycle are being disturbed. Also the increasing impermeability of cities is causing huge stormwater and flooding problems. Subsequently this disruption of natural water flows leads to droughts in other areas further compounding the problems. These are just a few of the resource consumption problems plaguing our world today. The airport is a place that promotes many of these problems but it can also be the place that begins to address these problems and catalyze conversation and ideas on producing developing sustainable cities.

PROBLEMS

The critical resource problems associated with airport infrastructure are water, waste, fuel, electricity, among many others. Inherently the process of flying relies upon the consumption of many of these resources but they problem is that they are not made apparent to the passenger, who normally passes through oblivious to the numerous systems and natural resources that make that journey possible. Without understanding the environmental ramifications of one's flight it makes it very difficult for people to change their consciousness regarding environmental issues associated with flying. The airport is a place that should make these issues apparent and relevant to passengers.

Water

Water is a very pressing issue today and is the resource in most danger, as well as the one most vital to human survival. It was the subject of a recent Metropolis magazine competition to come up with solutions for how to provide clean, drinking water to millions of people who cannot reach it. (Metropolis Mag) A recent article on WorldChanging also discussed that the concern for the safety of oceans and ocean ecosystems is reaching the same level as the discussion on global warming. (Steffen & Levitt, 2009) Furthermore, other technological advances are threatening the security and availability of water. In lieu of the global shortage of fuel, the big trend has been to move towards biofuels, but one of the big problems is that they use a huge amount of water to produce. Recent studies have revealed a range of 100 gallons to 2,100 gallons of water being required for the production of 1 gallon of bioethanol, one of the primary biofuels. (Live Science Staff, 2009)

Another big problem with water today is the huge consumption of bottled water, an extremely unsustainable practice. The amount of energy, oil, and water expended to make the plastic bottles is astronomical and extremely damaging to the environment. To produce the plastic bottle for a 1 liter water bottle requires approximately 5 liters of water. Then there is the cost of transporting the bottled water

across the globe. (AskPablo, 2007) It is a hugely unsustainable practice. This again goes to the movement of living locally, where we consume water within our region and not have to drink water that is shipped from thousands of miles away.

Airports are distributors for an extremely great amount of bottled water and they also waste tremendous amounts of bottled water because of the new safety regulations regarding liquids. Numerous passengers by bottled beverages and then forget to consume before going through security and then have to dispose of them hastily in line. First of all, airports need better warning signage to prevent people from bringing bottles to the security check, mostly this seems to be a problem because it is a new regulation that airports could not have anticipated in their early design.

Waste

Directly related to problem of water bottle usage is waste, and other throw away materials that our culture has become particularly fond of. A most striking statistic related to airlines is that we use one million plastic cups on flights every six hours. (Jordan, 2008) Solutions to this, face an interesting dilemma, because passengers aren't allowed to bring liquids aboard so must use the disposable cups on flights, but these are wasted without much use at all. We need to look for strategies where we use less disposable materials, but even the disposable things must be used for greater amounts of time and purposes.

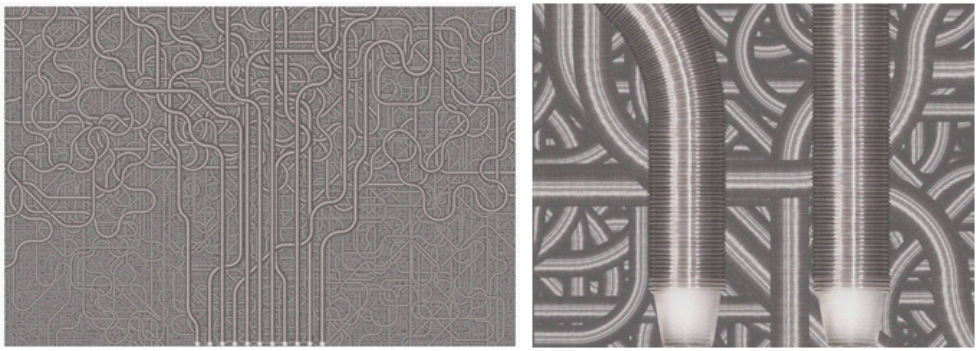


Figure 4.16 | Wasted plastic cups on flights
(Images from chrisjordan.com 2008)

Energy

Directly related to waste and energy consumption is jet fuel. This increasingly scarce commodity is still being spent profusely to launch more planes into the air. The consumption of jet fuel and the expulsion of high-altitude carbon dioxide is perhaps the greatest environmental hazard of air travel. Perhaps the only sustainable long term solution is to stop flying, but that is not realistic given the current progress of humanity today. The airport can do more to make people more aware of this problem, recently the tax on fuel which is added to passengers tickets has done a little bit to make people more aware of the problem. However there isn't much displayed at the airports about the damaging effects of carbon dioxide emitted at high altitudes. According to some reports, one average 2 hour jet flight is as damaging to the atmosphere as a year of driving by the average American. (need to find report) If this is true it is very alarming and needs to be highlighted throughout airports. Regarding energy usage another huge problem is the amount of electricity airports consume. As they are operational for 24 hours, they never really have down time, and have a vast number of lights on both inside and outside the terminal. Especially runways, which must be fully visible at all times, they rely on a huge source of lights and so many airports are looking for newer sustainable strategies.

SOLUTIONS

"The world of man is expanding. This generation is living the fulfillment of an early dream of mankind: it has set foot on the moon. We are still in the grasp of the adolescent stupor that accompanies the discovery of our own power. And yet, wisdom is of the essence if we are to redress the course that now leads the human species to suicide. This can only be done if we develop a full consciousness of our growing influence over our environment, accept new rules of stewardship, and develop a responsible plan of environmental management." (Dansereau, 1975) We need widespread solutions to these enormous problems that face our society. The airport is the place to start any new ideas as it is a place that can quickly reach a broad global audience. By making the most challenging global problems apparent at the airport it will create a greater impact.

Water

We need to expose the vast quantity of resources humanity is using, at the airport and make people aware of this ongoing challenge to reduce our consumption. This could be done in various ways, the airport could directly focus on the resources it uses, or it could be more generic and about resource consumption in general. Another strategy is to look at the city the airport serves and display some of the sustainability challenge that city faces and display them at the airport. For example when I was staying in a hotel in Madrid, the bathroom had signs about the water challenge that Madrid faced. I had never realized that Madrid had a water crisis, and by displaying this kind of information at the airport, it will be possible to reach a wider global audience.

Perhaps an interesting intervention would be to take all the confiscated bottles and create an artistic exhibition about the problems regarding bottled water, and make it visible not only to the people who had to leave behind their bottles but to other people passing through the airport as well. Again if water is a particularly challenging problem for that city maybe it could display more geographical representations of the water problem. Displaying large maps of the city with the locations of major water sources might be one strategy. This could be not only on walls in the terminal space, but also on other material such as at water fountains, and in the bathrooms, places where the city water supply is accessed.

Bottled water sales should be reduced at the airport or other alternatives should be offered. One of the simple alternatives is boxed water, especially those packaged in boxes made in an environmentally responsible way. This is not the ideal solution but it might be a step towards more individual responsibility with water. This might however be suitable for the airport environment, where passengers are not allowed to bring their own liquids, and would have to purchase them, so it makes for a more environmentally friendly compromise.

Figure 4.17 | Reducing Water Consumption
(left) No places to recycle bottles leads to frustration for increasingly environmentally conscious citizens
(right) In Newark Airport's Terminal C these ads by IBM display to millions of passengers the amount of resources factories waste annually

Figure 4.18 | Solutions
(left) Animation by Cornell Professor Doug James visualizing water bottle recycling as water falls *(image from http://www.cs.cornell.edu/~djames/bottledWater/)*
(right) Boxed Water is Better for the Earth than bottled water *(image from treehugger.com)*

Carbon Emissions

Water is a big problem associated with airports, but perhaps more directly related is the problem of carbon emissions. One of the solutions to carbon dioxide emissions has been purchasing carbon offsets. The success of this is still debated but it does hold some value and maybe airports can have kiosks for purchasing carbon offsets directly in the terminals. The individual market for purchasing carbon offsets is much smaller than the corporate and institutional one but they still represented almost $91 million of offsets in 2006. An airline thinking about and offering carbon credit incentives is Jet Blue. On their newly launched 'Jetting' campaign they highlight the need for carbon offsetting. Through their partnership with Carbon Fund they have established a simple platform for passengers to examine their carbon output based on the flight and then pay a certain amount to offset that carbon. They have partnered with three specific projects, dealing with wind, water, and trees across the country and the funds would go towards these projects as they are attempt to reduce carbon emissions there. This is a solid approach and has many benefits but one of the weaknesses is the disconnect between the traveler, the destination, and the project that is supported. No matter which destination one flies to, through JetBlue, there are currently just three projects, a windfarm in Texas, a solid waste management treatment plant in Upstate New York, and a reforestation project in the Tennessee Valley. While these are great causes they might not mean much for someone flying from Los Angeles to Denver, and so the offsetting efforts need to be more tailored to the local region and environment.

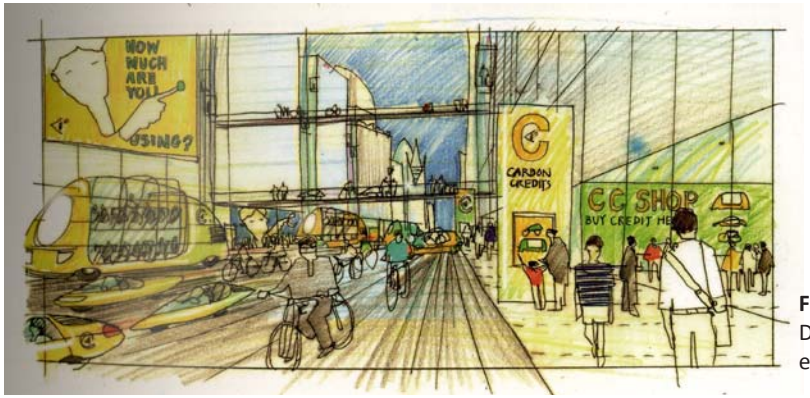


Figure 4.19 | Carbon Credit based Transit Oriented Development Future
Design concept by Normal Foster for Carbon Credits along Transportation Oriented Development *(image from la Biennale di Vienze)*

Lately there have been big pushes for renewable sources of fuel energy, but producing biologically based jet fuel has been challenging because of the high altitudes at which the fuel must remain liquid. One of the solutions has been to try algal biofuel and recently has been through tests on a Virgin Atlantic flight. These tests are still in the early stages and will take some time to evaluate their long term ecological impact and commercial viability. (Lindberg, 2008) Another promising development is from researchers at North Carolina State University who have patented a system for turning any fat source into jet fuel. It is a process that they claim is one hundred percent green because it does not include any petroleum derived products at all. It can also be made from cooking grease, the leftovers from restaurants which are usually discarded and not used as they are usually perceived as low-quality. (North Carolina State University, 2007) Therefore it might be possible to team up directly with restaurants to provide jet fuel with all of their waste from deep fryers and other fat sources. Probably the restaurants within the airport would not be sufficient for providing enough source for making fuel, but they could be a start. However, by teaming up with all the restaurants in the city it might be possible for the airport to generate a decent amount of jet fuel from all the wasted fat. There could be some sort of payment scheme and these airport-restaurant partnerships would be mutually beneficial financial as well as providing a unique airport – city partnership. There is a similar system in San Francisco for biofuel production through restaurant waste partnerships but not specifically for jet fuel. (Newsom, 2009) These emerging multi-networked models of resource exchange and recycling are crucial for advancing towards sustainable lifestyles.

Energy

Solar-powered LED lights seem to be gaining moment and are being installed in a number of airports. Not only are they more efficient with power usage but they also require maintenance, making them more sustainable. (Airport Technology, 2008) Most terminals are also lit 24 hours because they are functional at all times of the day, so it makes it challenging to reduce energy usage. Terminals are also moving to use LEDs indoors which helps to some degree, but this needs to be made aware to the people who travel through. Perhaps it

can be inspirational to have them replace home lights with more energy efficient ones and also to use lights less. Turning lights off has been part of an increasing conscious about the matter, in fact just last year the earth hour initiative was launched to turn off the lights in major buildings and locations for an hour. This year it just happened on March 28th, 2009 at 8:30 pm, where many cities turned the lights off in big buildings and other monuments. It was both a physical and symbolic gesture that could be inspiring in its scale and scope. (Barrowclough, 2009)

Another new energy generating idea that is taking off is energy harvested from piezoelectric floor materials. One company Powerleap has produced a product which can be inserted outdoors or indoors in places of high traffic such as the airport. It generates electricity from wasted human kinetic energy. (Powerleap, 2009) These products might not be all that effective at offsetting the huge amounts of energy consumed but they can be engaging and make people think about these issues especially if the energy generating pads were used in creative ways. They should not be hidden from public view and just generate energy in the background but rather they should be placed around places to start conversations regarding our energy consumption problems.

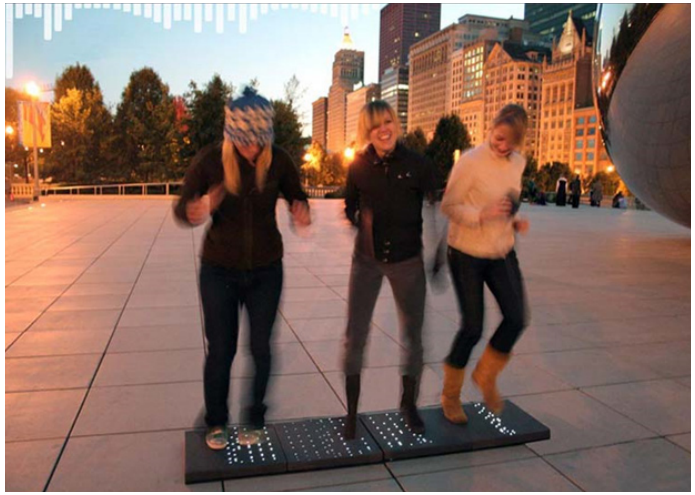


Figure 4.20 | Energy generated by human motion
Piezoelectric pads are ready to use from companies such as POWERleap
(image from powerleap.net)

D / DEMOCRATIZING AIRPORT USE

In continuing the human body analogy, if the city's infrastructure is the connective blood vessels, the airport is probably most likely the lungs, the mediator between internal and external conditions. Highly centralized, all flows are coordinated through this one organ. However, the airport is different, whereas the lungs serve every blood cell, the airport only accepts a small slice of people. The lungs are the one source of oxygen where every red blood cell must journey to in order to pick up the life sustaining material from the external world as well as release their internal tension of carbon dioxide. In cities not every person has a chance to experience the airport and its expansive connection to the broader world.

Airports are not designed for people who are not passengers, workers, or others who will use the building. People who come to pick up or drop off are generally kept out of the system and are not "allowed" to engage with the airport. Airports should be designed to accommodate the free-flows of public and private lifestyle scenarios. An airport exists to serve its city, or more specifically all of the citizens of that particular city.

Who are the different groups of people using or are affected by the airport? In her thesis on creating a positive passenger experience, Kachornnamsong devises four subgroups based on their purpose of airport use. First there is the 'Mobile Professional' the frequent flyers who are always on the move using the latest communication technology to move from place to place according to the whims of their work. Next there is the 'Global Relocator' someone who is moving their residence to a new locale. These groups generally perceive the airport as negative and not a great place to be. The next group in her classification is the 'Original Visitor' someone who travel by air for short term stay in another location that is not purely for tourism. Finally there are the 'Tourism Tourists' who are generally pleased with the transit space, they view the experience as recreational to a high degree. (Kachornnamsong, 2006, p. 22)

Figure 4.21 |What do meeters/greeters do?
(left) Hagerstown, MD airport: "If you are being dropped off, you can pull right up to the front door. While you cannot "park" directly in front of the building, you don't need to feel harried by the congestion, rushed by traffic eager to take your spot, or angered with a ticketing police officer. You can take your time and, at your own pace." - from the Hagerstown airport website *(image from flyhagerstown.com)*
(right) Delhi airport: There is a Visitor's Lounge for the Meeters/Greeters

Kachornnamsong also covers airport operators as a fifth important user group. The airport operators group includes all the technical coordinators in air traffic control, ground control, baggage handling, terminal management, ticket handling, security, the food service providers, flight attendants, and pilots. However these categories still exclude a segment of the people who use or might use an airport. There are numerous groups of people who are not passengers, one of the biggest being the people who either drop off or pick up others from the airport. Commonly known as meeters/greeters, they generally navigate the airport parking maze to find a spot to wait briefly before being shooed by the security guards. The hassle and cost of finding a short term parking space usually means that these people never enter the airport but just wait in the car. Some of the other people who use or would like to use the airport are planespotters, retail vendors, volunteers, general visitors, homeless, and perhaps other workers whose jobs are linked to airport businesses. Each of these

groups of people are affected by airport design and in turn their appreciation and positive experience of the facility might reciprocate to benefit the airport in return.

Meeters/Greeters

According to my survey, 68.4% of the respondents indicated that they were dropped off at airports as opposed to taking public transportation or driving themselves. This reveals one of the biggest groups of people who use the airport without ever going through it, the individuals and public transit service members who drop off or pick up passengers. In most places, they are only allowed to wait briefly by the terminal and are made to dart about without ever getting the chance to go in and enjoy the airport. One of the problems is that the passenger they are picking up is usually coming from the baggage claim area, where there are no amenities for a visiting meeter/greeter. The baggage claim area can be redesigned as an interface for exchange instead of just leaving. At some airports, there is some thought put into the experience for the meeter. For example at the Hagerstown, Maryland airport, the small scale design of the airport makes it comfortable for someone to park and walk into the terminal without feeling rushed.

Planespotters

Planespotting was a passionate hobby for a great majority of people when flying was new and exciting. Overtime as the process and routine of air travel became mundane people lost that initial excitement and began to stop caring about the passing of planes. There are however those who continue this pastime with great vigor and passion. "All planespotters belong to the same genus, but their behaviors divide them into different species. Some spotters want to see every plane at a particular airport. Others, known as fleeters, focus on a single manufacturer, type of plane or airline." (Koeppel, 2008) Many of the airports in the early days used to provide observation decks either inside or outside the terminal space for passengers or others to watch the take offs and landings of the giant mechanical birds. Recently, however, in the great security increases around the world's airports, planespotting is a risky hobby because they are seen as

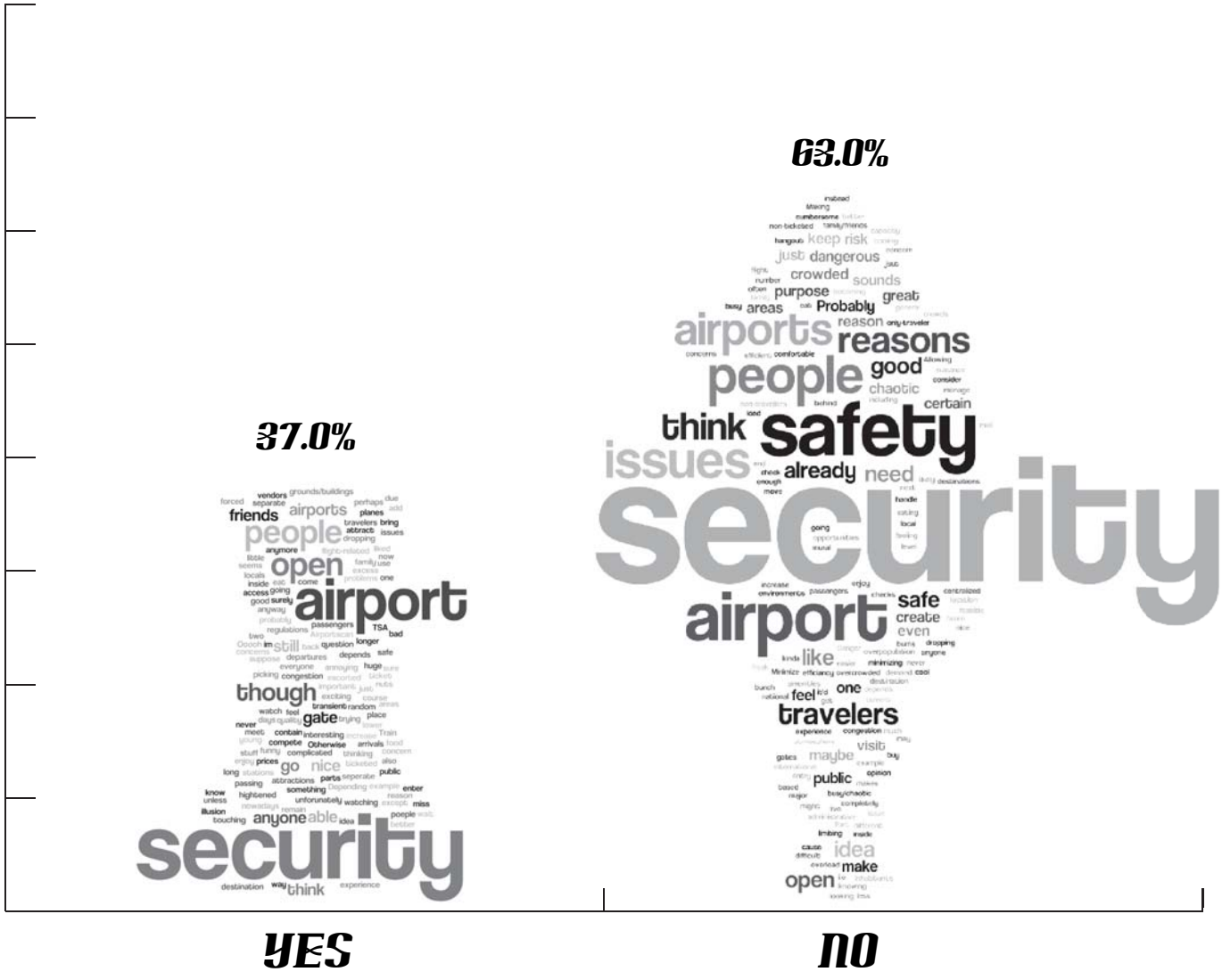


Figure 4.22 | Survey Q48: Do you think the airport should be a destination open to anyone, instead of being limited to only those with tickets?
Everyone seems to be concerned with security but if these issues were sorted out then this idea seems to be acceptable

people who shouldn't be there. Ironically planespotters might be some of the airports best assets for the airport security team, because they are very detail oriented people. Some of the eyewitness accounts and documented photography from planespotters has been used to track rouge aircraft and drug dealers' planes. Due to their vigilance they can be a valuable asset to an airports security team. (Koeppel, 2008)

Homeless

Although many might view this as unfortunate, the airport also attracts a large number of homeless. This is particular noted at Heathrow in London, where dozens of homeless blend in with the throngs of passengers. For many of the homeless this provides a great environment for their way of life. "To be in transit is to be disconnected, but for some of those sleeping here, rootlessness is not temporary." In fact major airports work with homeless outreach organizations to help them find accommodations. This group adds another fascinating layer to the airport story, making them more like cities rather than single-function transport corridors. (Harbell, 2008) Thinking of and designing airports to become more multifaceted is also critical for making them more habitable places.

Workers

The problem with working in transportation infrastructure is that they are so one sided. For example take the toll booths, the slowest common denominator of highways. The busiest booth in the world is the George Washington Bridge in New York City, where 300,000 vehicles drive by in one day. Toll booth workers have to deal with the constant noise of traffic and also worry about germs spread through handling sometimes filthy money. There is a strong risk of hearing loss and the fumes from vehicles do not bode well for the collectors' health. Still the job provides a decent salary and a platform from which one could retire, it is work but it can be dehumanizing. (Rose, 2006) This is because it is fairly one sided there is no real creative engagement or room for thoughtful application for the toll booth worker it is a pretty robotic job with an occasional conversation or two. Until transportation infrastructure becomes more multifaceted

and not used just as a means of getting somewhere but rather a place for social transactions, then the people working within it will probably continue to face the same problems.

What is it like to work in the airport? As there are a vast range of jobs the perspective might vary greatly from one position to another. The workers who typically come in contact with passengers are those who work in retail, the ticket counters, the security officers, and the flight attendants. There are of course the myriad of workers who are invisible to the massive passenger flows, there are the air traffic controllers, the baggage handlers, the chefs, the maintenance crew and other service members. An important aspect of developing sustainable solutions in this environment is to create bonds between passengers and airport workers. Often times the common stories are that airport workers are rude and that it is not a pleasant experience interacting with them. Then there are other stories where an airport worker was a godsend and helped out stranded passengers beyond the call of duty. We need to build bonds of social capital in the airport even among strangers. It can be the cauldron of initiating global ties and connections, after all weak ties are what really build stronger more resilient cities and communities. (Bishop, 2008, p. 150) Ultimately these ties will help to humanize the airport and this is an important catalytic step in moving towards sustainable design and living.

What can People do at Airports?

From my own family vacation travel experience, the flight was never viewed as part of the vacation and we did not relax until we sat down in our hotel room at the other end. Also somehow, if we ever did want to spend some time in a good airport, we usually would have no time between connecting flights. What makes some airports inherently more desirable to inhabit? Is it the architecture and ambiance or the different activities available for spending time and money? Airports are mainly for flying, or if not that shopping is a close second. Some airports have business centers for meeting clients, for example the Munich airport has a special dedicated area in the front of the terminal just for this. Other than these issues related to commerce and globalization there isn't a whole lot of other activi-

ties that are encouraged.

This needs to change, airports used to draw huge crowds for plane-spotting and just watching the massive flows of people from around the world. This environment also can provide great artistic environment because of the creative inspiration it can provide. Even though there are massive flows of people there are still many quiet corners of airports that can provide places for reading or sleeping. For most the airport is just a stop along a journey, it is not usually seen as a place to go visit. There are those who realize that airports are changing and their functions are expanding. (Zurich airport) This extends beyond just shopping as well, many business travelers now look at the airport as a place to get some work done. One of the reasons this is an attractive environment for the harried traveler is that there is no escaping the airport environment for various reasons, there are generally few distractions and it can be place for contemplation. There are also an increasing amount of lounges, and work areas that serve to facilitate this purpose as well. (Fast Company Staff, 2008) Actually it extends beyond just working, it can also be a place of relaxation and rejuvenation. The Albany airport has a meditation and prayer area, along with many other airports. These are facilities that are open to any ticketed passenger using the airport. Most airports however have more exclusive clubs, health spas, and rejuvenation rooms that are usually reserved for special members or for business and first class customers. This is a good start, but these areas of relaxation need to be opened to more of the airport. A facet that could be developed is an opportunity for meaningful use of people's time and skill. This does not necessarily mean that people have to work and spend energy while they are trying to enjoy the respite of transitory space. Instead it is about providing an opportunity for those who are seeking something to do while they are in this liminal space of the terminal. For example there could be creative pursuits that could engage the broader challenges that face the world. This might involve public or private storytelling, such as the Story Corps project installed at Grand Central Station in New York City. This program which has since expanded across the country was about providing people a chance to record an interesting story about their lives to be preserved and provided to the public. (StoryCorps, 2009) Not only has this evolved into a unique and vital public research tool, but it also provides creative empowerment to people which might help

increase their self-actualization and empowerment.

Another creative tool that engages the public in a place of transportation is the new Via GigaPan panorama creator developed by Carnegie Mellon University but installed in Chicago O'Hare Airport. The mission and driving force behind Via GigaPan is very closely linked to the anthroportscape concept. The tool allows people to take and share high resolution photographs that can be weaved into a panorama with various insertions such as text and audio. In the Chicago airport, this can be used to create photo-collage-experiences of the city and displayed to the myriads of transitory passengers who pass through the hub without ever visiting the city. As explained by the creator Illah Nourbakhsh, the idea is to enable people to tell stories and create meaningful conversation. "GigaPan and all of the Global Connections Project is fundamentally about connecting people to each other and to the environment. In other words to our world, and we measure success by seeing the degree to which we are really causing meaningful interactions and conversations that hopefully improve the world over time. So if people are humanizing each other, if there's conversations happening between people who would never talk to each other, and if people's value systems are changing a little bit so that socially they are more at one with each other, then we're succeeding." (Carnegie Mellon University, 2009)

This type of technology used properly not only helps creatively empower people but it is also a way of cultivating a stronger sense of place. There are numerous interactive media projects that are finding homes in airports throughout the world. One project in Ireland was called Portal and in the words of the interaction designers, "the project's goal is exploring how a physical locale – which is shared and lived in by a number of inhabitants – could be augmented through digital technology in order to engage people." It provided passengers waiting in the airport lounges a chance to share their travels around Ireland in a way that was playful. (Ciofli, 2007) Playfulness in design especially in interactive objects is a really important human consideration. This is perhaps at the stem of creative empowerment and so adapting a strategy of play and discovery into interactive experiences would be the best strategy for such public endeavors. Interaction

designer, Bill Gaver has spread this philosophy of ludic design or design for play, an idea that stems from the book 'Homo ludens.' The driving idea behind all of this work is the idea that people are intrinsically characterized by play as much as they are by problem solving. Tapping into this fundamental idea allows designers to focus on creating tools that move away from goal-oriented tasks towards tools for playfully exploring our world. (Gaver, 2007) This is exactly the type of thinking that needs to permeate transit space and so starting with technologies to facilitate this are vital to fostering a more human airport.

These various tools and engaging elements of the airport need to be integrated in a way that makes them accessible; not only for the passengers but for the workers, for the flight crew and attendants, and possibly also meeters/greeters. Perhaps the airport could be designed in compartments and also allow non-passengers to engage with the airport and it can become a destination for civic engagement, relaxation, and creative stimulation.

E / BUILDING A FORUM FOR CULTURE

"Sustainable design should be inherently able to imbue the people who view it with the desire to maintain it and the knowledge that making it last is a part of their heritage. It should represent a powerful need because it is valuable to them socially, culturally, artistically, and spiritually." (McGuire 52) The idea of heritage does not often seem to make sense in the transitory space of the airport; however, with the global fluidity of networks and people sharing and trading between cities, the preservation of heritage becomes even more significant. It is a task not only of the citizens who live there, but the millions of tourists who come there to actually view the cultivated heritage and city, so it should also be part of their responsibility to at least be aware and preserve this human resource.

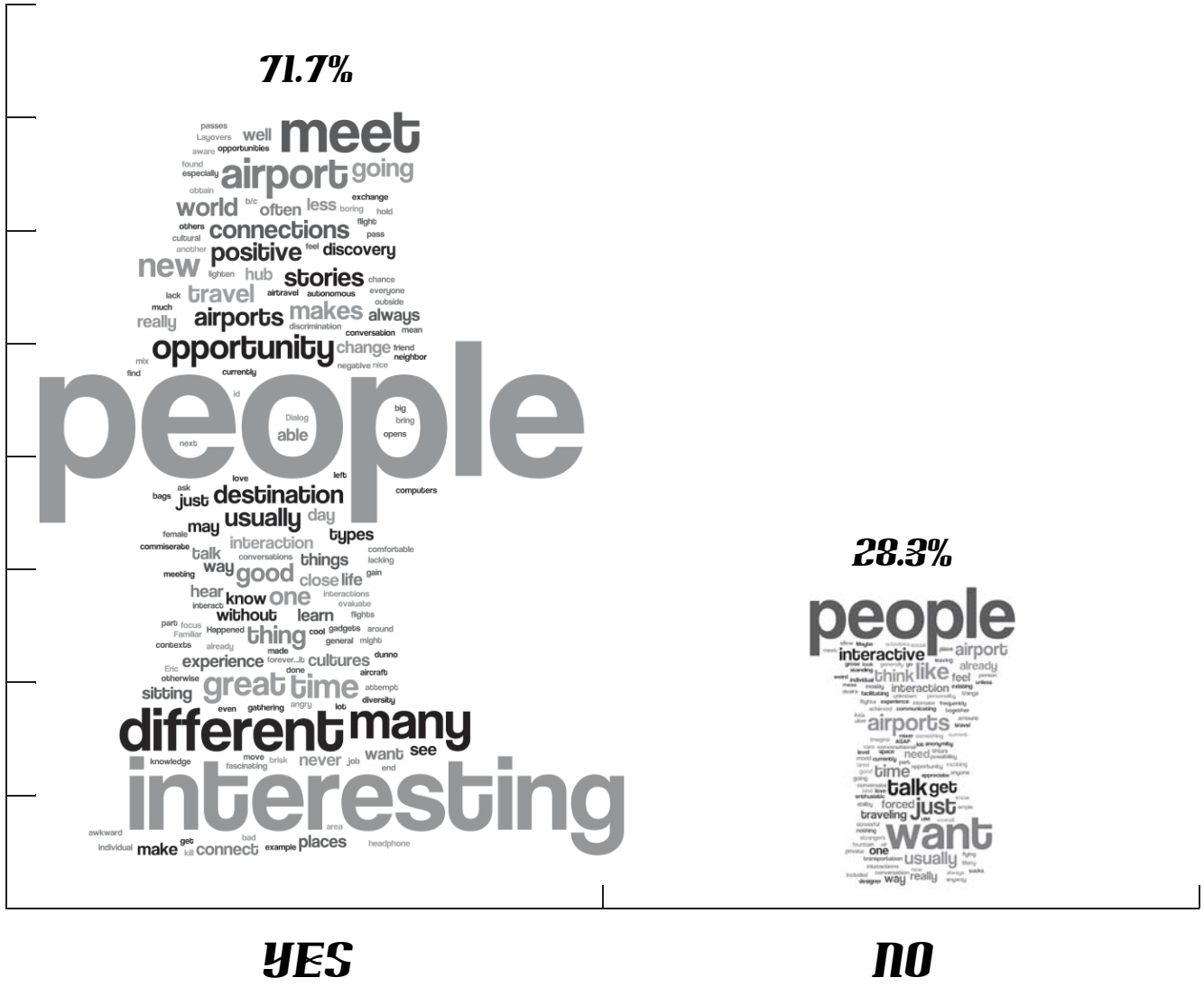


Figure 4.24 | Survey Q49 Do you think there should be more conversation and social interaction between the millions of people passing through airports?
The words different, interesting, and opportunity pop out

"It's currently rather lacking and **BORING** in this area." -R1

"Some people are really **WEIRD**" -R13

"Its not a mixer, **ITS TRANSPORTATION**" -R4

"It's always **A GOOD THING** to connect with other people" -R23

"**BUT HOW,** when time is precious and the experience is outside the airport?" -R31

"You can meet a wide range of people from all over the world at an airport, who can **CHANGE YOUR LIFE** and your perspective in so many positive ways." -R30

"you can make connections, even **FIND A JOB** or a **NEW FRIEND** at another part of the world." -R34

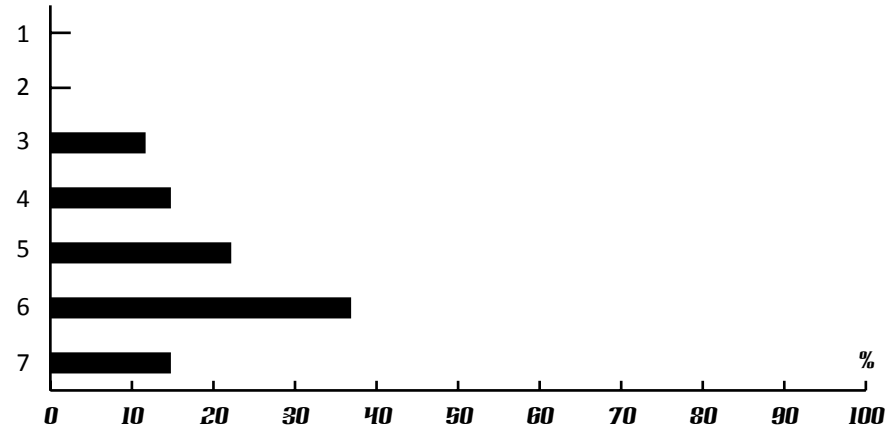
"I **LOVE THE ANONYMITY** of the airport. It is part of the experience of leaving one place for something new, unknown and exciting." -R47

"i think there could be- but it **SHOULDN'T BE FORCED**- it doesn't need to be conversation of social interaction to be interactive. people standing together to look at a fountain is interactive in a way. people should be as interactive as they want to be. **FACILITATING** the **POSSIBILITY** of **INTERACTIONS** could be good." -R45

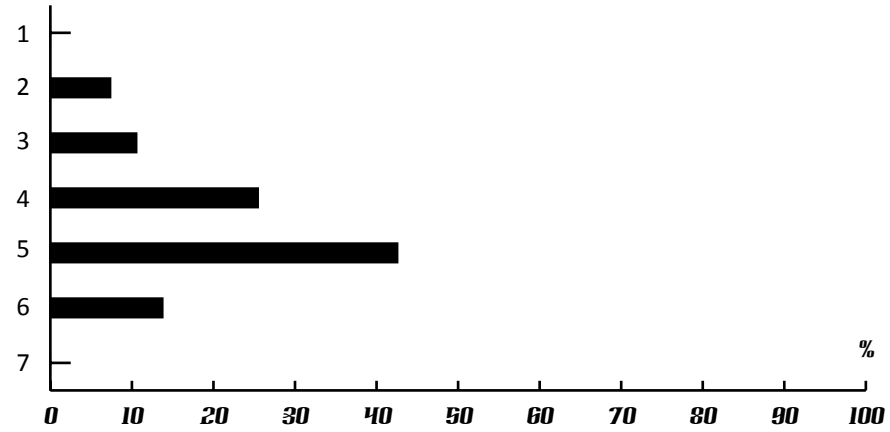
Figure 4.25 | Survey Q49 Do you think there should be more conversation and social interaction between the millions of people passing through airports?
Select Quotations from Respondents

One of the most important pieces to the sustainability puzzle involves understanding other cultures and people, so that we can reduce friction based on ignorance. The airport provides a unique opportunity for this, because it combines vast numbers of people from all corners of the globe and keeps them in an environment where most people are free to pursue shopping or waiting. (Kachornnamsong, 2006) They are waiting in lounges near their departure gate, or sometimes spending time at food courts, or finally having drinks at the bar. There is a great untapped opportunity to start conversation at the airport among strangers. The bars perhaps are the most social and can help to engage conversation. It is not only a means of combating idle time, but is also a system for building trust and a cooperative spirit in an environment often scathed with dubious uncertainties.

In order to transform the airport into a forum, there are major elements that need to be changed. First of all, the quest for increased efficiency creates the problem of continual movement. This is not the ideal situation for allowing people to stop, think and converse. Airports also atomize interactions; the rule of security seems to trump any quality of humanness in these facilities. Also the increasing numbers of machines that are replacing human transactions are hastening these problems. (Wood, 2003) This need for conversation at an airport is also not just from a purely ecological viewpoint, but also is great for business. Due to the proportionally high number of business travelers in flights and airports, meeting people on your flight is a great networking opportunity. (Fast Company Staff, 2008) Forming a forum, either informal or specifically programmed in an airport requires a careful understanding of these various hindrances.



Q24: How would you rate your overall airport navigation experience ?



Q39: How would you rate your overall flying experience ?

Figure 4.26 | Q24 and Q39 ask about rating two different facets of the airport experience, Navigation & Overall Experience (1=worse - 7=best)
Both data sets show a slight bell curve but the navigation peaks at 6/7 whereas the overall experience peaks out at 5/7. Also there was no one who chose 1 in either question.

Creating the Space for Conversation

"Networking got a bad name when it was hijacked by the business world. But it could hold the key to the formation of a more caring, compassionate and efficient society." -Theodore Zeldin (Coates 299)

Airport environments are designed to facilitate large flows and thus efficiency is usually the primary driver of airport design. Unfortunately this leads to environments that are long and stark, not places for dwelling. Even if there are signs or different visual media on the wall, the airport warps the experience because of the continual movement it demands. (Fuller and Harley, Aviopolis 82) All the interactions at the airport are mediated through this continual process of movement. Even when one is sitting in the gate waiting area, they are waiting to board the plane, land, and then zoom off to their next destination. (Pascoe 199) There is an opportunity to slow down and build temporary networks of communication between the flowing passengers to create a more human environment in the airport.

Peter Adey explains that this journey is actually a series of trapped spectatorships. While there is continual movement throughout the whole environment, what actually happens is that passengers are trapped in different chambers of the airport throughout the whole process. (Adey) This is very much in sync with the notion of architecture as being used to create a scripted (or non scripted) cinematic journey that is mediated by one's travel through space. Eisenstein explains that this relation between architecture and film extended all the way back to the ancient days of the Acropolis of Athens, calling it, "the perfect example of one of the most ancient films." It was a site designed to be viewed and appreciated in motion, haptically and dynamically through senses beyond just our visual. It is, "a spectacle of asymmetrical views kinetically produced." This kind of architectural-cinematic pairing has been employeed by numerous architects, such as Bernard Tschumi in his Parc de La Villette. The series of folleys arranged sinuously throughout the park are supposed to unfold as a succession of frames and experiences. (Bruno) This is the view that many airport architects take in understanding the manifestation of how their buildings are read. Paul Andreau who designed many terminals such as Charles deGaulle in Paris, argues that the real mean-

ing of airports is realized light, color and the movement brought to them by people. (Edwards 17) They are spaces activated by human activity and that is what makes the dynamic, not the global aviation system.

The Airport Journey

"In the pursuit of our itinerary, the place – that ethnographic imaginary of organic sociality – becomes little more than a sign saying 'you are here'. In our need to move, we submit to a series of invasive procedures and security checks that are becoming pervasive and yet are still rationalized through a discourse of exception – "Only at the airport". In transit spaces one doesn't see landscape as one sees landmarks (and oneself) indefinitely 'othered' as pax, citizen, consumer, security risk, traveler or anonymous free spirit." (Fuller and Harley, Aviopolis 44)

For most; however, this journey through the airport is hardly the idea of a joyous trip, yet their itineraries start and end at this processing plant, their vacation does not begin until they've landed and entered their hotel room. The whole process of flying is merely a necessity and is sped through as fast as possible. Still it is not all negative, there is always a sense of wonder and awe at the spectacle of the airport-machine network. Airports ability to inspire speaks to a hidden human side of these massive concrete and glass behemoths. Finally, airports can create a sense of pride in a city and help to unify populations along the promise of a better future. However, it is important this change and hope the airport brings is tied to the urban fabric of the city, and not the global ambitions of economy, otherwise the airport will lose meaning over time and will become another relic of post-industrial modernism.

The process of traveling through the airport can strongly be mapped to a series of checkpoints or steps along a continuous process. This reinforces Adey's view of the airport as a series of (im)mobilities and each creates its own process of spectatorship. The airport authority is interested in maximizing the time a passenger spends in the terminal as this will result in increased revenue from retail. However this

must be mediated with the challenge of facilitating a smooth efficient flow of people through the global system. Ultimately this leads to a series of places to hold passengers, which may or may not be holistically designed into the overall architecture of the terminal. It does however create interesting relationships for the passengers as observers of space and provides interesting "geographies of the spectator." (Adey)

Flow & Pause

The functional requirements of processing, security, and safety severely limit and control the lines of movement and vision of the passengers. (Cosgrove 229)

Architecture of the terminal environment is probably one of the strongest influences on confusion in the airport. Elements such as high ceilings, long passageways, distantly separated gates, complex spatial layout, all contribute to this exhausting experience. However, as usual not all airports fall in this trap and some are actually good at designing more human scale elements within the larger terminal space.

Figure 4.27 | Flow & Pause at Orlando
The long straight space enforces a strong sense of movement, but the tiled mosaic on the floor encourages spectatorship and stopping. These two forces seem to be contradicting each other here, so how can airport spaces be designed that reconcile both movement and stopping.

Figure 4.28 | Flow & Pause Continued
(clockwise from top left) Boston Logan Airport International Terminal - Long Stark Passageways, Frankfurt Airport - long sterile corridors with colored light as dressing, Newark Liberty Airport - Waiting for the shuttle, Newark Liberty Airport - Seating along a ramped corridor

At Schipol in Amsterdam, The Netherlands, the main thoroughfare has high ceilings and a great deal of open space, but the store on the left employs a lowered ceiling to create a more cocooned environment, ideal for dwelling and spending time. On the tram at Orlando International Airport, while you are in motion one is given a respite both physically and mentally. There is the fact that one can stand still on the tram but then the natural scenery provided on the short journey provides a refreshing view of lakes and islands, masking the planes in the background. Grand Central Station in New York has tall ceilings like in airport environments, but in their dining hall, the setting is much more comfortable and habitable. Creating lower ceiling, more human scale architectural environments is a good way of creating habitable local environs within the broader transit space. This strategy is also successfully employed at Albany, NY's International airport, where the waiting areas at the gates have lowered ceilings and use different materials such as brick to suggest a more homely setting. However the seating arrangement inside is still to dispersed to suggest any sort of conversation between passengers.

Figure 4.29 | Shopping & Moving at Schipol, Amsterdam
Schipol is an excellent airport for many regards, one example of which is its understanding of flows. In the areas that are meant for passenger movement the celings are higher and in areas of dwelling, such as the store, the ceilings are lowered to provide a more intimate atmosphere.

Figure 4.30 | Moving & Stopping on the Tram at Orlando
The tram connecting the different terminals at Orlando provides a physical and mental respite while in motion because of the natural scenery that one passes through in between the two buildings.

Figure 4.31 | Flow & Pause at Albany International Airport
Although the thoroughfares are wide and promote movement, there are a variety of art installations that help to pause the traffic. Also the seating area by the gate has lowered ceilings, which encourages pausing. The chairs are not arranged in a friendly manner.

Figure 4.32 | Flow & Pause at Grand Central Train Terminal, NYC
The main ticket hall of Grand Central Station has high ceilings which promote the efficient flow of massive volumes of people. However, in the food court area, the ceilings are much more lower and are at human scale, encouraging eating and dwelling.

Exhibiting Information

The placement of art and information about different issues is something that must be understood within the context of these passenger flows & pauses. Some projects might work in zones of movement, especially if they are interactive at faster speeds, but those which demand thought and reflection are better displayed in zones of pausing. Once people are in a paused area of the airport and realize that they don't have to be in constant flux they might be more inclined to learn, ruminate, participate and converse. These displays can either be static works of art that are on a rotated on a schedule such as with museums. Or it can be dynamic interactive displays or other imaginative device to engage the public. The goal is to not bombard passengers with all the problems of the region and planet but rather to just make the issues apparent in an artistic and generally passive context. It should incite exploration, discovery, and conversation around critical issues of our world.

Figure 4.33 | Exhibitng artwork at Ithaca AIport
(left) Easel of artwork in the Ihtaca airport that is place at the juncture between the central sidewalk and the departure lounge.
(right) Artwork on display by Beth Schwab from Dryden, NY n the Ithaca, NY airport

Figure 4.34 | Passenger Oublie Interactive Experience at Toronto Airport
Passenger Oublie is an exhibit in the Toronto Pearson airport called Terminal 01. It is an interactive system to facilitate dialog between passengers with their mobile phones and digital screens and about engaging them in answering some of the tough moral quesiton our society wants answers to revolving around travel. This is an interesting study of flow & pause because the exhibit is along a moving corridor but one needs to stop to read what is happening. On the other hand texting can happen on the go and so there are some interesting complexities intrinsically associated with this.
(images from: http://www.year01.com/terminal01/ & flickr.com)

Opportunities for Conversation

One of the biggest challenges to creating a more social culture in airports, is the rise of amenities that promote isolation. Internet cafes, automated stores and other features that are being implemented, are all about the individual and actually actively dismantle potential human to human interaction. (Wood, 2003) This recent trend has also been coined by Lieven De Cauter as capsularization. Passengers travel from the capsule of the car to the capsule of the aircraft, but in between they also capsularize themselves when keeping themselves occupied with a variety of personal electronic accessories. "Departure lounges are not commonly a place for social communion." (Gottdeiner, 2004, pp. 185-7) Even on the planes themselves new technologies are designed to limit social interactions. Many flights are now outfitted with individual television screens instead of large public screens. This allows great customization for the individual allowing them to choose from a plethora of movies, shows, music programs and so on. Although one gets to choose their own inflight movie, this system has created social hindrances. Before when everyone watched the same movie, there were synchronized emotions, everyone was on the same page, just as in a movie theater. During comedic scenes everyone would laugh out loud and it served to create a sense of bonding with strangers. Now however with individual screens, all the laughter and tears are kept isolated furthering the amount of atomized interactions. Social interaction and conversation needs to be ignited throughout the flying journey to create a more hospitable public environment.

Initiating conversation could be mediated in various ways. The least unobtrusive and simplest would just be for the airport to have signs and opportunities throughout the airport for person to person interaction. (For example Kalyanee's airport travel tips posters in the bathrooms) (Kachornnamsong, 2006) The airport could create a campaign in conjunction with the city, where they encourage people to share experiences of both places. It becomes a passive effort on part of the airport in promoting conversation.

Or the effort can be slightly more direct and rely upon subtle interactive information displays. For example Wish Spark was an airport

Figure 4.35 | Viewing a Message
Artwork in the Philadelphia Airport provides the artist with a large audience

Figure 4.36 | Leaving a Message
Comment boxes in Philadephia (left) and Chennai (right)

installation that welcomed a coin donation with glowing lights. Moreover it was meant to increase social interactions among groups of people because of its animated nature. (Park, Nam, & Lim, 2008) The next stage would be a more forced interaction, either with the architectural design of the spaces, or through some manifestation of virtual programming.

Conversation on airplanes is another strategy, sometimes you strike up a temporary conversation with your immediate neighbors. Now however many planes, especially the international flights have video screens with interactive games. I remember playing a trivia game on an Emirates flight from New York to London on route to Hyderabad. It was an interesting experience because it made me feel connected with other people on my flight, but at the same time, I had no idea who they were other than their seat number, which flashed by on the high score screen. What if there was the ability to send them text messages or other sorts of communication, it could create a more comfortable flight, where people talk to each other.

A Forum of Global Understanding

An important of making the airport a citywide and global forum is to connection to all the existing institutions, organizations, and individuals working towards this goal. This includes museums, education institutes, parks, city agencies, tourism, zoos, restaurants, and so on. By intertwining the human potential of the city into the airport it can both increase the connection between airport and city, while also positioning the airport as a creative commons.

When inaugurating Idlewild (now JFK) in New York City, President Truman spoke about world understanding: “This airport can aid directly in the work of the United Nations. It will be front door of the United Nations. Men and women from the far corners of the earth will land here in their search for peaceful solutions to their countries; difficulties. Representatives of the United Nations will take off from here for troubled areas to make peaceful, ‘on-the-spot’ settlements . . . We favor the greatest possible freedom in international travel

and communication, because we know that knowledge leads to understanding. There never has been and never can be war between nations when their peoples have known and understand each other." (Pearman, 2004, p. 138)

Understanding other people and cultures is a very tricky and multidimensional problem. A lack of understanding and miscommunication can lead to the greatest of human problems. Even on smaller scales, there are numerous follies and stories that a result of cultural misunderstandings. For example when the great architect, Le Corbusier designed the headquarters for the Punjab government in Chandigarh, the buildings had their balconies converted to kitchens to better suit the Indian residents. (Hall, 1990, p. 107) Cultural gaffes play a small but significant role in the history of world relations. Take for example JFK's visit to Berlin after the Cold War when he mistakenly introduced himself as a jelly donut instead of a citizen of Berlin by saying "Ich bein ein Berliner." The truth of the exact phrasing is disputed and some claim the whole story to urban myth or legend. However so, it is a story that is continually passed on and brings back to focus an interesting historical time period of global relations. It was during this time period that the Berlin Congress Hall was opened in West Berlin as a symbol of German-American camaraderie. It was symbolic architecture that was supposed to create conversation and cultural understanding around the structure. Its design is analogous to airport architecture in many senses and it is even referred to as an architecture of exchange. (Scherer, 2007)

Today we face new challenges and tensions across the world. Primarily there seems to be a divide or lack of understanding between the western world and the Middle East, especially highlighted by the events of 9/11. It is however, not that simple, this is not about broad regions of society understanding another broad region of society, but rather the individuals and the connections they make at the person-to-person scale. The airport is a place that allows for this personal level of meeting and understanding people who are different from oneself. Instead of hearing numbers or statistics, it's a chance to engage with real people across the globe and make real connections that can provide real feedback.

This leads to a personal story, I have often heard about medical systems around Europe functioning much better than the system we are working with in the United States, and I had not ever looked into it too much. On a flight from Boston to Frankfurt in the summer of 2007 I was sitting next to a German physician and she was recounting to me how she wanted her children to become physicians in the United States. She felt that the system provided more opportunity and would be better for the future of her children. It was an insightful conversation for me, I'm not sure if what she expressed was totally true or not, but it gave me a real perspective of a big contemporary global issue. Airports are the places that can function to increase this permeability between people and cultures.

Although not everything Truman covers is sensible now, but the idea that understanding others is the key for potential world peace is crucial. Although most cynics describe the idea of peaceful coexistence as futile and stupid notion, what is more futile is their pessimism. As long as humans can imagine a better world we can work towards that goal and perhaps that optimism might one day manifest itself. Airports are buildings that can elevate and captivate the human imagination and spirit due to their very impressive architectural presence, the technological wizardry they facilitate, and the huge flows of people they explicate. They are the ideal places for exhibiting and creating a culture of conversation and understanding across the globe. Their common functional typology makes this goal relevant throughout the planet, but the display of local identity and culture is what facilitates this conversation. They are the lynchpins of tying global and local sustainability together and as long as they make this visible to the people using them, they will continue to be relevant.

F / SPECULATING ON AIRPORT FUTURES

Airports without Airplanes

What happens to an airport after it is no longer used for flying. This is a debate that many scholars and environmentalists are already engaging in. New Internationalist magazine has a feature about ethical traveling titled, “To fly or not the fly?” In addressing this issue they look at issues such as travel writing for magazines and newspapers where foreign correspondents are frequently flying to different regions of the world to make sense of a story. Also when people traveled to the Frankfurt Book Fair, many considered going by train instead as it would reduce the environmental impact, but the additional time that it would require made it unfeasible to most of the participants. (Brazier, 2008)

For example there is a proposal to turn Berlin’s Tempelhof airport into a giant lake in the heart of the city. (Pruned, 2009) Tempelhof was the huge airport planned out by Hitler that was supposed to showcase Germany’s industrial and scientific might. Today it is a shadow of itself because of its political history and connections and the city does not really know what to do with it.

Alternatives to flight are increasing their competitiveness and are going directly at the airline industry, as depicted by this Amtrak ad in NYC’s Penn Station. In fact even airport industry magazines are talking positively about the resurgence of railways and rail infrastructure as better for the future sustainability of the planet. In Passenger Terminal World’s March 2009 Issue there is a feature about the growing similarities between airport and rail terminal design.

Also one of the grim realities airport operators will be facing is that people might not want to fly as much, in times of economic uncertainty or because of raised environmental awareness. This is an issue currently being felt by one of the world’s leading airports, Schipol

Figure 4.37 | Uncertain Airport Futures
(top) At Penn Station, Amtrack is directly competing against Airlines and they are more environmentally friendly so there might some interesting shuffling happening in the transportation sector soon

(bottom) Abandoned Section of San Francisco International Airport *(image from flickr.com user: Lost America)*

in Amsterdam, the Netherlands. (passenger terminal expo forecast article) This trend has continued throughout the United States as well. Two of the largest airport hubs have seen sharp falls, Dallas Forth Worth has lost 7 % of its air traffic from last year, while Pittsburgh has lost nearly 40 % over the last few years. (Torbenson, 2009)

Finally airports need to be prepared for a world without flight. What function might an airport serve if there was no more flying. There are in fact many airport models on which this effect could be evaluated. Throughout the rust belt of the northeastern United States, there are many defunct airports, which have been converted into office space and other functions. Is this what they should be used for, or can they still remain monuments to capturing human creativity and imagination?

Finally airports need to be prepared for a world without flight. What function might an airport serve if there was no more flying. There are in fact many airport models on which this effect could be evaluated. Throughout the rust belt of the northeastern United States, there are many defunct airports, which have been converted into office space and other functions. Is this what they should be used for, or can they still remain monuments to capturing human creativity and imagination?

What about airports that are abandoned, or those segments of airports that are no longer used? For example a whole section of San Francisco's airport is abandoned and not used for anything, yet it is in close vicinity of huge flows of people, making it an area highly fit for repurposing. Abandoned airports also offer great architectural and planning insights into what can go wrong. They allow one to visualize alternative futures of what could happen to their city or airport if the strategy is not one that is thoroughly examined and sustainable.

Figure 4.38 | Transformation from TWA to JetBlue at JFK
The TWA terminal at JFK International airport in New York City was left even though it was unoperational because of its iconic architectural status. Eero Saarinen's terminal has been transformed into the entrance for a newly created terminal for JetBlue, it is an abandoned terminal that became renewed.
(Photograph by: Barry Beagen)

5. CASE STUDY: HYDERABAD, INDIA

A / INDIA TODAY

“India frustrates description because everything you can say about it is true and false simultaneously. Yes, it could soon have the world’s largest middle class. But it now has the world’s largest underclass.” -Suketu Mehta (la Biennale di Venezia 243)

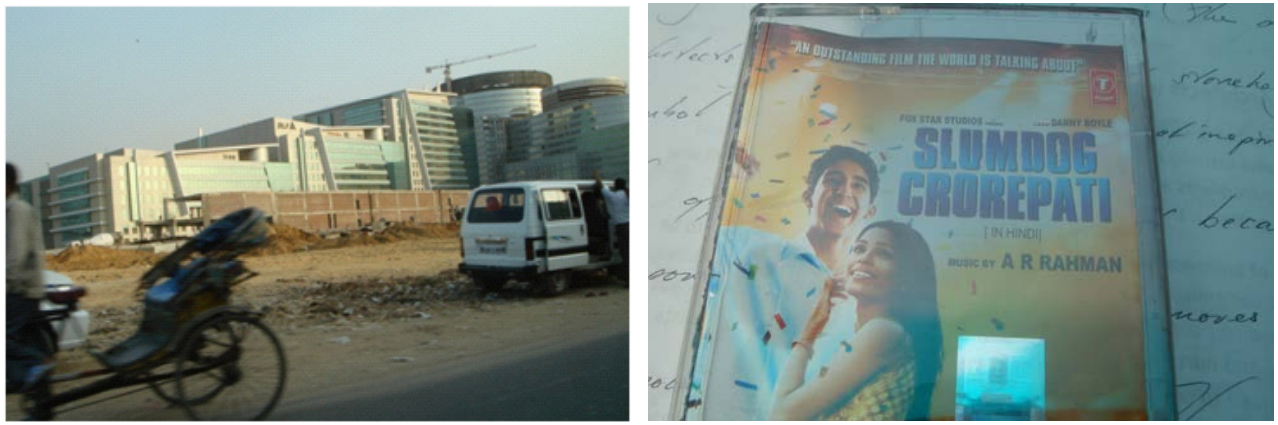


Figure 5.1 | Two Indias
This photo is emblamatic of India today, the rickshaw crawling past the modern office complexes depicts the dynamic transition that India faces today.

Current Image

While India is rapidly modernizing and trying to emulate the West, a third of the country still is in poverty and there is a growing disparity between the social classes. Modernization projects, new office complexes, airports, highways all have huge impacts on older local means of living. For example major highway projects ripping through the cities of India are making it very treacherous for people to cross the roads or use bicycles and rickshaws. Thus, the highway creates zones that become inaccessible to those who cannot afford private automobiles. The highway segregates access to mobility and access to the city’s networks and resources. As such, they help to exacerbate the socio-eocnomic disparity. This picture in Gurgaon, one of the affluent suburbs of Delhi is particularly telling of this worsening crisis.

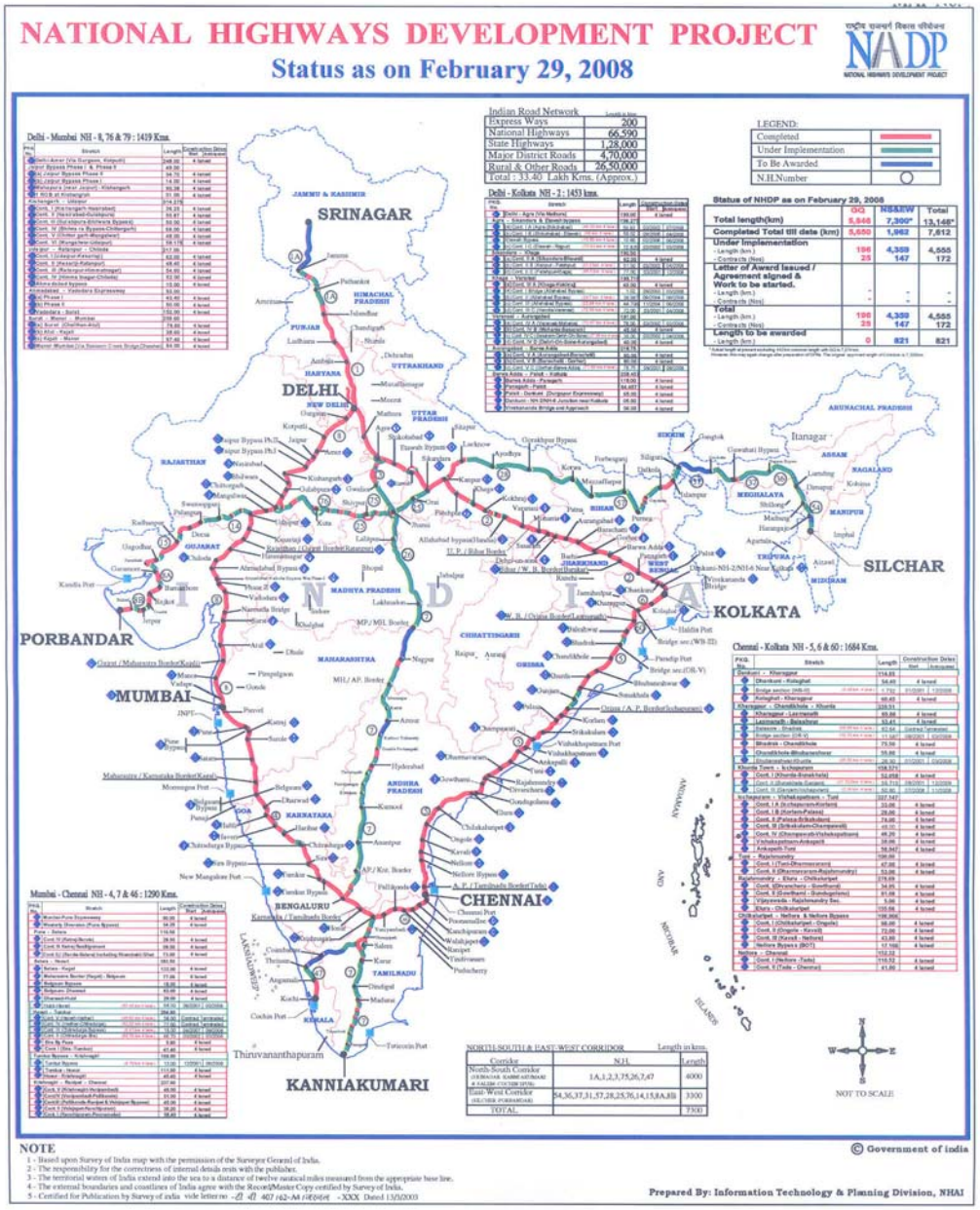
India has a growing gap between the haves and have-nots and for the sustainable future of the country; development has to benefit both sides. On one hand there is "India rising" with all the glistening office complexes and new airports, but there is still a rotting core of hundreds of millions of people who are struggling to make it. This growing disparity has been the subject of recent media, such as the 2008 Man Booker Prize winning novel, "White Tiger" by Aravind Adiga. Also the phenomenally successful movie, "Slumdog Millionaire" by Danny Boyle also captures this fervent dynamism of India today. "Either India can choose to be divided by its vertical divisions or choose to be united by its horizontal aspirations." Nandan Nilekani (Nilekani, 2009)

India is following the suburbanization patterns and trends of the United States in the past and in step with present day China. (Pucher, Peng, Mittal, Zhu, & Korattyswaroopam, 2007) There is great concern that this unsustainable pattern of development increasingly focused around consumption can even further widen the gap between the rich and poor. The newly released Tata Nano, the world's cheapest car promises to provide safe, affordable transportation to the masses. It is a valiant effort but the problem is that India does not have the road capacity nor the additional associated infrastructure to deal with this massive influx of vehicles. Not to mention the in-

Figure 5.2 | Ambience Mall in Gurgaon, Delhi
These signs throughout a large mall in Delhi were interesting but it showed an aspiration at least in the marketing that India wanted to be just like other world class cities, namely New York and Bangkok, there were other cities throughout as well.

creasing pollution levels in the congested inner cities. The intention was that a four door car would be a safer alternative to the scooter, which might very well be true, but as the average size of vehicles on the road increases, traffic congestion, sound pollution, automobile accidents, gas consumption, demand for new highway infrastructure, and parking also increase. (Bidwai, 2007) This is immediately evident when dissecting trends in American traffic patterns as everyone moved from small to large sedan then to SUVs and large trucks, the road infrastructure has had to increase to accommodate these shifts. It is an extremely unsustainable pattern of development and now many American cities are working to limit the influx of private automobiles. However in India as well as China the trends are moving away towards increased automobile usage and limited public transit. To support this shift to private automobiles the Indian government is building a massive highway system, referred to as the Golden Quadrilateral as it connects the four largest cities of Delhi, Kolkata, Chennai, and Mumbai along with smaller cities along the way such as Varanasi, Vijayawada, Bengaluru, and Ahmadabad and many others. In America and the west the development of highways brought create personal mobility but they often ravished cities as they tore through existing communities creating numerous problems. Hopefully India will not make the same mistakes in constructing inner city highways.

Figure 5.3 | Ruinous Infrastructure?
The Tato Nano promises to transform India in providing safe, personal, mobility to the masses but will it make the country better? The private automobile demands a great deal of road infrastructure to function. This often has serious consequences for the healthy functioning of a city.



"We have not achieved our full economic potential because we have not built infrastructure. We have to make our airports passenger and cargo hubs that can become the drivers and engines of growth." – Civil Aviation Minister Praful Patel. This is also a period of rapid aviation infrastructure development throughout India. India's aviation market is projected to grow by 8.5% per annum. (Passenger Terminal Expo India, 2009) The same condition can also be witnessed in the IT industry throughout a variety of Indian cities. Bengaluru being the capital of IT has continually been building business campuses with public investment and these fortified areas of the city has placed it in the world map. The problem is the local condition

Figure 5.4 |National Highway Plan
These signs throughout a large mall in Delhi were interesting but it showed an aspiration at least in the marketing that India wanted to be just like other world class cities, namely New York and Bangkok, there were other cities throughout as well.

around the city where the majority of citizens live in informal settlements and have no access to the benefits of globalization, just the side effects. (Madon, 2004, p. 309) The rapid development of infrastructure can be dangerous if it is not fully and holistically integrated into the fabric of the city. Furthermore the lack of interest and investment into public transit infrastructure will further serve to heighten the disparities between social classes.

Positive Future

Even so with all of the negative forces that seem to be taking over India, there is an underlying positive forward-looking vibe emanating from the country. For one, India's new but strong democracy is a strong force in ensuring that decisions will try to maximize their potential reach. Bollywood and a strong cultural and artistic tradition are important for cultivating a sense of identity, of hope, of providing entertainment, and meaningful pursuits for people. It has the potential to move people's consciousness away from consumerism, and towards a more fulfilling way of approaching life. Strong counterculture networks and new energy are infused into Indian cities daily and with the presence of new media centers such as Sarai in Delhi, this seems to have the potential to drive a new form of urbanism that has yet to be witnessed. (Lovink, 2002, p. 204) India is a nation of positive energy and this will ultimately be the driving factor for its future advancement. Its strength comes from its plethora of languages and heritages. The dynamism between each of the individual cultures is what creates the potential for innovation and social advancement. India has an immensely rich history and this alone is a sign of longevity. It is not a nation built in an instant but a way of life that gradually developed organically, merging independent regions into one country. India's rich network of villages and strong urban metropolises must collectively work together to ensure holistic, sustainable advancement for the nation.

B / HYDERABAD, ANDHRA PRADESH

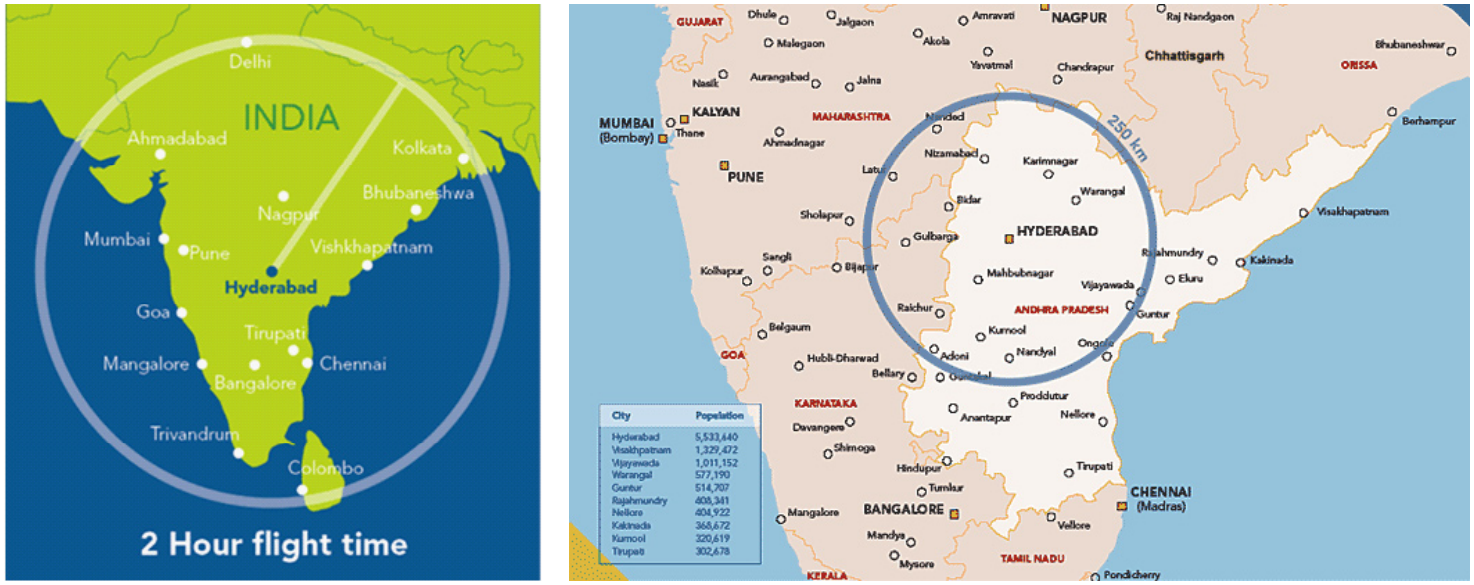


Figure 5.5 | Hyderabad, Andhra Pradesh
Located in the center of India, Hyderabad is the rich cultural capital of Andhra Pradesh *(maps from: newhyderabadairport.com)*

Hyderabad sits in the center of India, within two hours flying time of the whole subcontinent. Currently its metropolitan population is near 9 million inhabitants situated in an area of approximately 778.0 sq km resulting in a population density of 14.192 inhabitants per sq km. It is a unique and interesting city and is a model for understanding a myriad of conditions around the world. Today it is rapidly growing into one of the global megacities of the next decade but it faces numerous social, economical, and environmental challenges. (Taubenbock, Pengler, Schwaiger, Cypra, Hiete, & Roth, 2007) A 400 year old city, Hyderabad is interesting because it was historically always ruled by a Muslim crown even though the majority of the citizens in the area were Hindu. Currently the city's population is divided nearly equally between Muslims and Hindus at approximately a 40% to 50% split, with the remainder comprised formed of other religions. At the center of a city lies a manmade lake in which, stands a statue of Buddha, even though there are not many Buddhists in the

city. Moreover, the current Chief Minister (governor) of Andhra Pradesh (the State of which Hyderabad is the capital) is Christian. So it is a region that seems to offer religious tolerance and is openly democratic. Historically a peaceful environment for an agglomeration of culture, Hyderabad can capitalize on this as a positive marketing campaign for tourism. By focusing on the multi-cultural, multi-religious nature of the city it can become an exciting harmonious global destination.

Hyderabadi Identity

Hyderabad's Identity is constructed from a rich multifaceted combination of natural and social history. It is a dynamic identity that is constantly formed at the edge of a plethora of dialectic forces. The earliest history of Hyderabad is its geologic one, located in the center of the Deccan Plateau of India, it has been blessed with some unique environmental conditions. The central inland location limited the access to water, one of the critical resources for societies to begin and flourish. Hyderabad did have some water but what was really unique was its abundance of rocks, both natural geological sculptural rocks as well as a richness of diamonds and other jewels.

Geological Identity

The sculptural rock formations are quite spectacular and are among some of the oldest rock formations on earth. They are a series of hard granite formations dating back to the Precambrian period about 2.5 billion years ago. (Society to Save Rocks, 2009) Hyderabad is uniquely blessed with rock outcroppings throughout its landscape. These granite ridges and hillocks are precious and create unique flora and fauna microclimates that are important to the health of the bioregion. (Hyderabad Greens, 2009) Recently with the increase in development along the peripheries of the city, there has been a steady and dramatic loss of the rockscape of the city, leading to the formation of the "Society to Save Rocks". This grassroots organization is an exciting example of the vitality of Hyderabad's citizens as well as an indication of the city's consciousness regarding environmental protection and cultural identity.

Hyderabad not only has some of the oldest and unusual granite formations but it has also been one of the richest sources of diamonds in the world. Some of the most prominent diamonds in history are from this city including the famed Koh-I-Noor diamond which now adorns the British Crown and sits in the Tower of London. These were found near the rocky hills of the Golconda region which evolved into a fortress due to the riches that were discovered there. In addition to the Koh-I-Noor the Pitt Diamond was also from Hyderabad, which passed from William Pitt through a variety of French aristocracy is now displayed at the Louvre in Paris. The other significant diamond from Hyderabad is the Hope Diamond which after a series of transactions now sits in the Smithsonian in Washington D.C. (Kumar, 2006, p. 30) This trade was exemplary of globalization in previous centuries and this connection between Hyderabad and the three capitals of the United Kingdom, France, and the United States is interesting.

This richness of wealth is or might have been what attracted powerful rulers to Hyderabad. Although the city is not near the coast it became established as the largest center for pearl markets in India, a tradition that persists today. Hyderabad's become a market for pearls because of its midway location between the two port cities of Machlipatnam and Goa, making it an ideal place for setting up the pearl businesses. The Nizams, the last of the powerful Muslim rulers who ruled Hyderabad, were a family that owned an enormous amount of Pearls and they helped attract wealth to this central city. (Kumar, 2006, p. 125)

Social Identity

Hyderabad was born out of the love between the Muslim prince Muhammad Quli Qutub Shah and the Hindu courtesan Bhagmati. (Kumar, 2006, p. 2) Shah built the city for Bhagmati out of love, eventually she converted to Islam and changed her name to Hyder Mahal, the namesake of the city. This cross religious relationship is what set the city in motion and is perhaps one of the greatest forces in shaping the identity of the city. The Qutub Shahi dynasty were the earliest rulers of the Hyderabad-Deccan region and this began with Sultan Quli Qutub Shah in 1518 and ended with Abul Hasan Tana Shah in 1687 when Golconda (the seat of power) was taken over by Aurung-

zeb, the famed Mughal ruler from Northern India. The Qutub Shahi period was one of the richest periods of Hyderabad's urban development.

"Hyderabad during the Qutub Shahi regime, was the nerve center of different cultures, art and traditions that gradually evolved into the renowned Hyderabadi way of life." (Kumar, 2006, p. 32) The city's soul, the Charminar, literally the monument with four minarets, was constructed in 1590. This became the center of the city and nearby was built one of the largest Mosques in India, the Mecca Masjid whose 77 year construction was not completed until Aurungzeb took over. There are many more significant architectural marvels dotting the city that were built during this time period. In 1562, the Husain Sagar, the heart-shaped man-made lake was constructed and today it is at the center of the city and helps to form the urban image and identity of Hyderabad.

The next major period of Hyderabad's development was under the rule of the Nizams, this was a dynasty of seven generations that was an extension of the Mughal empire, and stretched across south-central India from coast to coast. The Nizams were in control of Hyderabad during the British rule of India until the transition to modern times. Due to the powerful wealth accumulated in the city the power of the Nizams they formed an uneasy alliance with the British. Eventually this led to the formation of a cantonment area for the British Army north of the Husain Sagar. This area eventually evolved into the twin city of Secunderabad. This period of the whole city's development saw another great infusion of architectural gems. The two palaces of Chowmahalla and Falaknuma were some of the largest and grandest royal residences in the country. There was also the development of many grand public architectural elements, such as Osmania General Hospital, the grand High Court, and the Legislative Assembly of the State of Andhra Pradesh, Osmania University, and many others. (Kumar, 2006, p. 36) The Nizams solidified Hyderabad's rich cultural heritage and helped to establish it upon the broader world scene.

The period from the nineteenth to twentieth century saw a variety of shifts in power and control. Along with the Nizams and the British

royalty there were the Paigahs, the Salar Jungs, the Hindu Rajas and other important nobles all forming a very large aristocracy. This time period also led up to the tense transition from British rule to Indian independence in 1947. This was extremely poignant in Hyderabad because the Nizams did not wish for Hyderabad to become integrated into the newly united nation of India. The concern was that Indian state lines were being drawn up along religious, language, and cultural partitions, and because Hyderabad was an even amalgamation of Muslim and Hindu culture the Nizams were worried that this spelt trouble for the city. Princely states such as Hyderabad were given the option to join India, Pakistan, or remain independent. In June 1947, Hyderabad was the only state that did not join the Indian Union and only after a brief invasion by the Indian army in 1948 did it join the Union, split up among Maharashtra, Karnataka, and Andhra Pradesh. (Kumar, 2006, p. 63) It was the end of princely rule and the Nizam dynasty quietly receded into the background as democracy took over Hyderabad and India.

Moving towards Global Identity

As the city has transitioned from historic kingdom to modern state the critical factor has been the dynamic between Muslims and Hindus. During the Nizam rule, both Muslim and Hindu festivals were celebrated and government offices would shut down. The city's small but solid Christian following openly celebrated Christmas. Along with the ruling Nizam's birthday, Queen Victoria, and the King of England's birthdays were also days of celebration in Hyderabad. (Kumar, 2006, p. 140) There was a general harmony that permeated the city and cultural occasions brought people together. The struggle for independence led to a rift between the two populations and began to warp the general harmony that persisted previously. Although there is a generally lasting peace many Muslims feel that the Hindus have taken over the city, and consider Hyderabad lost. There is no longer a presence of Irani chai and mutton samosas throughout the city as well as other key cuisine and cultural elements that used to form the identity of the city. Although Muslims comprise nearly 40% of Hyderabad's population they have a difficult time maintaining their cultural heritage. (Zyskowski, 2008, p. 6) There might be no direct explanations of why this is so, Hyderabad has always been a very fluid city and its culture has been formed from a variety of heritages.

Today Hyderabad has rapidly been transformed by the growing IT sector throughout the city, which led to the development of HITEC (Hyderabad Information Technology Engineering Consultancy) city in the 1990s which has become the home of international tech companies in Hyderabad. (Kumar, 2006, p. 156) It is adjacent to the wealthier part of modern Hyderabad, the Jubilee and Banjara Hills area. This region of the city is rapidly developing and through its international corporate connections is perhaps more rapidly affected by the global flows of commerce and ideas. With this growth and success Hyderabad attracts a large influx of people from all around India contributing to its strong patchwork melting pot heritage. It is a city that welcomes guests and is very tolerant to different religions, languages, and cultures. (Kumar, 2006, p. 156) In the chaotic rush of modern times, Hyderabad is a fairly solid model for religious tolerance and peaceful coexistence. Each religion treads their own grounds, and although there might not be a great deal of fusion between the two, time passes by without major conflicts. That is not to say there are not any tensions between different religions, castes, and factions, but overall it is a model for peaceful living.

What is the Hyderabadi Identity today?

Hyderabad is a city that continually adapts to modern times and conditions. For example, even in the early history of the city, when it was ruled by Muslim Nizam princes but the majority of the population was the Hindu Telanganas, the princes adapted to the daily realities and passed all their decrees and laws in the native Telugu instead of the upper class Urdu. (Kumar, 2006, p. 6) In more modern times, the city has quickly adapted to the worldwide IT boom and has made a dedicated effort towards nurturing that market. Meanwhile at present times, Hyderabad seems to be strongly conscious of the global sustainability challenge and hence has been working to make a solid plan for a sustainable future Hyderabad. (Schwaiger & Rapp et.al., 2007) Where does identity fit into this whole developmental puzzle?

The city is ever changing and adapting, but does strongly cling to its past. 400 years later with many monumental structures, the Charminar is still the everlasting symbol of the city. Even though English is rapidly becoming the language of choice, the new airport has still maintained all four languages throughout its signage system. Understanding identity in a city that constantly adapts to modern times yet still clings to its root is challenging. In her thesis on identity in Hyderabad, Zyskowski explains how her host sister in the city identified herself at home as a Tamil Brahmin, but then preferred Hyderabad to the Tamil capital Chennai, and then during her job at Google she spoke in Hindi. Individuals have so many identities in India and perhaps especially in Hyderabad. (Zyskowski, 2008, p. 2) One framework for understanding identity is through the social structure and interviewing or observing individuals. A broader reaching framework for exploring identity comes from theories on cultural landscapes by Mehtora in combination with the anthropologist Hannerz. They propose studying objects in relation to the landscape around the parameters of market, politics, way of life, and movements. Krank as part of the SHAKTI (Sustainable Holistic Approach and Know-How Tailored to India) project investigating Hyderabad proposes using these theories to understand the city. She looks at the combination of the identity of historic structures, the identity of modern structures, and the identity of informal structures in understanding the identity of Hyderabad. (Krank, 2006) In order to understand and propose ideas for the future advancement of the city it is necessary to combine these various analysis and elements together. Hyderabad has a rich tradition and identity, understanding it and utilizing it will be vital to the future of the city, as well as to Andhra Pradesh and India.

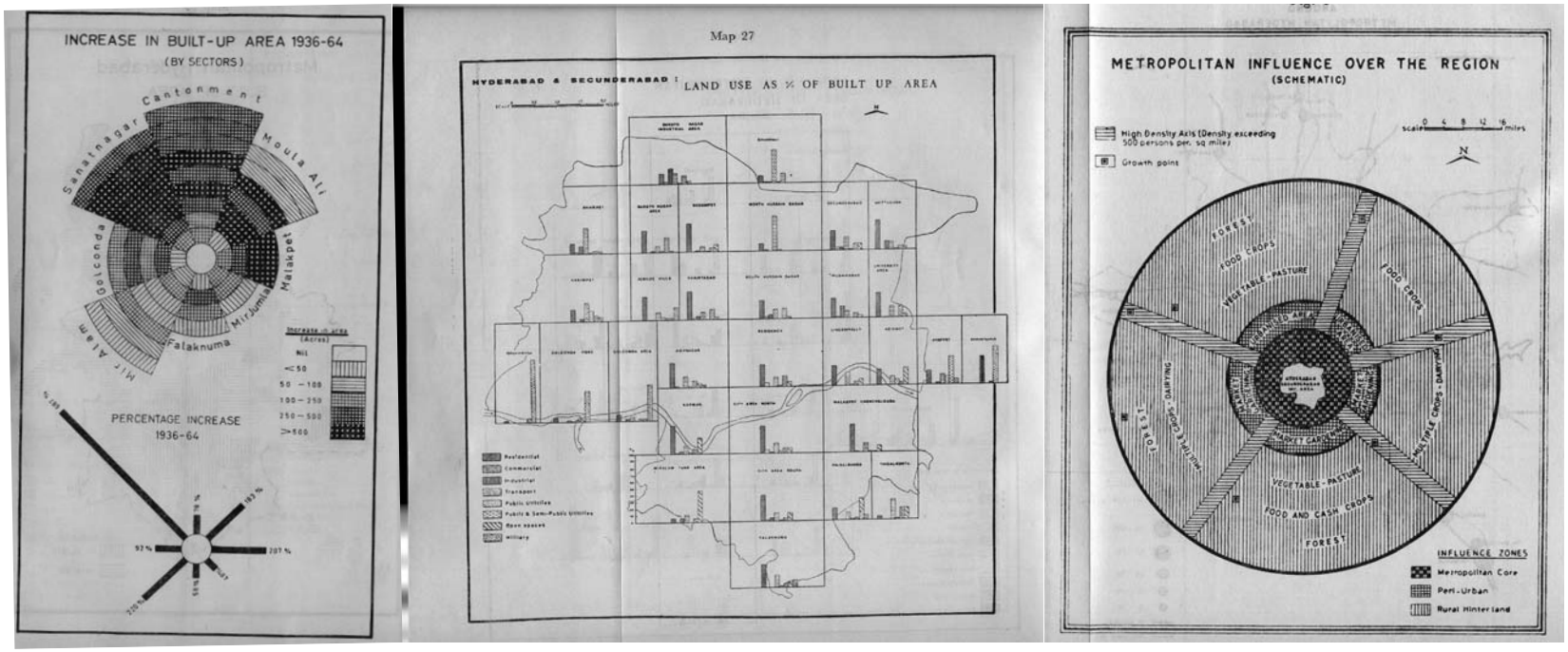
On a personal note, the future of Hyderabad is a particular concern of mine as it is the city my parents are from. It is the place in India that I most identify with even though I have always lived in the United States; Hyderabad is where most of my extended family in India resides. Also as a disclaimer I identify myself as a Hindu Telugu. I have visited the region approximately 8 times throughout my 22 year old life and with each trip have experienced particular slices of the city, so my understanding of Hyderabad is a synthesis of these personal visits in combination with all the literature I have explored.

Figure 5.6 | Charminar
The Charminar (literally four minarets) is the symbol of Hyderabad. It was built on a cross roads and is now in the heart of the Muslim old city. Even after 400 years full of a plethora of architectural wonders, the Charminar remains Hyderabad's most prized possession and source of identity.

Hyderabad has an interesting urban evolution, where the core of the city keeps moving to adapt to modern times. It is a city that constantly morphs to fit in the context of its time. It adapts to new languages, new rulers of different religions, new foods, new customs, and so on. This is what makes it a very potent global city and is an important factor for it being labeled a fast city by Fast Company magazine. However, it is still a city that clings tightly to the Charminar at its heart, often times it is just used as building imagery, but it evokes a certain history of the city that is quickly being left behind. It is interesting that in a 1970s analysis and planning strategy for the city, "redevelopment of the historic core" was one of the primary suggestions. For some reason it seems to have fell through and this is still a major area of contention. The main reason that is cited is that the coastal Andhra groups who have migrated to and gained power in the city are removed from the social and cultural histories of the historic core. The lack of mixing cultures has led to inaction to preserve and revamp the old city of Hyderabad. Along with revitalizing the historic core of the city, a balanced development of Hyderabad needs to include the integration of Rural and Urban development in the Metropolitan core. (Alam, 1972, p. 270) This is still a problem as the city

Figure 5.7 | Hyderabad State
During the rule of the Nizams, Hyderabad was an extensive princely kingdom reaching across central India. After Indian independence the Nizams lost their power and the State became divided along linguistic-cultural borders.

has mostly focused on its globalized urban functions burgeoned by the IT sector. This must be reconciled with the local conditions of the small towns and villages around the city and both have to be integrated together and seen as functioning symbiotically.



RISE IN BUILT AREA LAND USE AS A % OF BUILT UP AREA METROPOLITAN INFLUENCE

Figure 5.8 | 1972 Urban Development Maps of Hyderabad
These are a series of maps from a 1970s planning book on the metropolitan devleopment of Hyderabad. They all show the interesting radial growth patterns that occured throughout the city. The current trends in sprawling growth around Hyderabad are an extension of the urban movements taking place during throughout this time period.

Urban Form

The City was originally planned in the shape of a double cross along the east-west axis of the Musi River, with the Charminar at the center. (Kumar, 2006) This market area around Charminar formed the heart of the old city. Throughout the Qutub Shahi dynasty the city expanded northward to the Husain Sagar, forming the majority of Hyderabad. The British cantonment northeast of the city eventually formed into the twin city Secunderabad in 1806. As the city gained more wealth, affluent members of society began to spread outwards towards the west. This area eventually became developed into the rich Banjara and Jubilee Hills region. Very recently from the early 1990s the city continued this western push by investing in HITEC City as well as creating the sports arenas of Gachibowli. This has been the major growth sector of Hyderabad until the construction of the new airport in 2008, 20km south of the city near the village of Shamshabad.

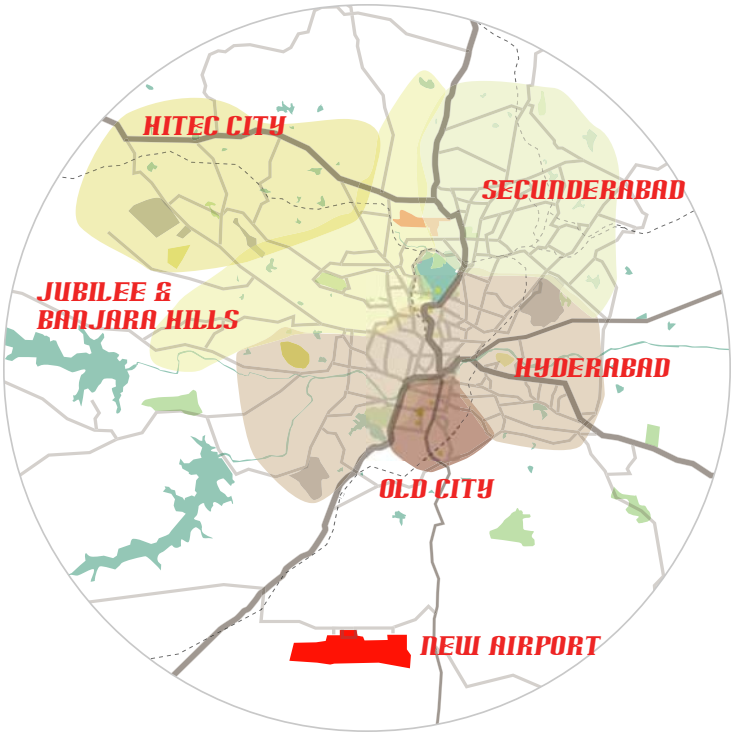


Figure 5.9 | Hyderabad Regions
The Old City developed around Charminar, then it spread north into the broader area of Hyderabad. The British Cantonment developed into Secunderabad and then this reached over into the affluent suburbs of Jubilee and Banjara Hills. The late 1990s saw the development of Hitec City towards the northwest corner of the city. Now with the new airport in the south, development is progressing around the western periphery towrads the airport.

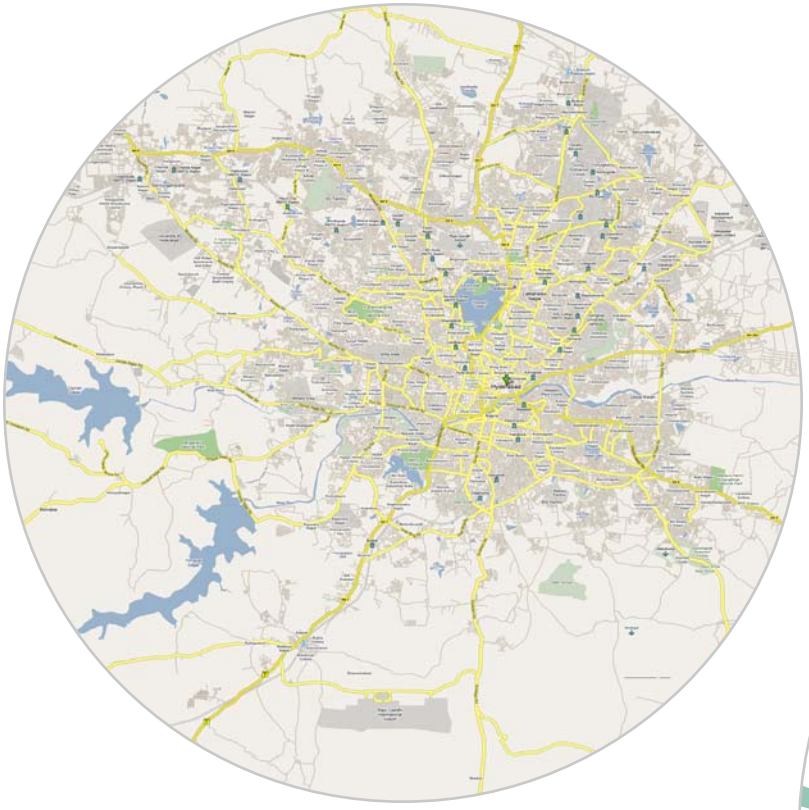


Figure 5.10 | Hyderabad Maps
The Hyderabad map from Google Maps as well as simplified version with key infrastructures and destinations included. Each of the features is explained in further detail on the following pages.

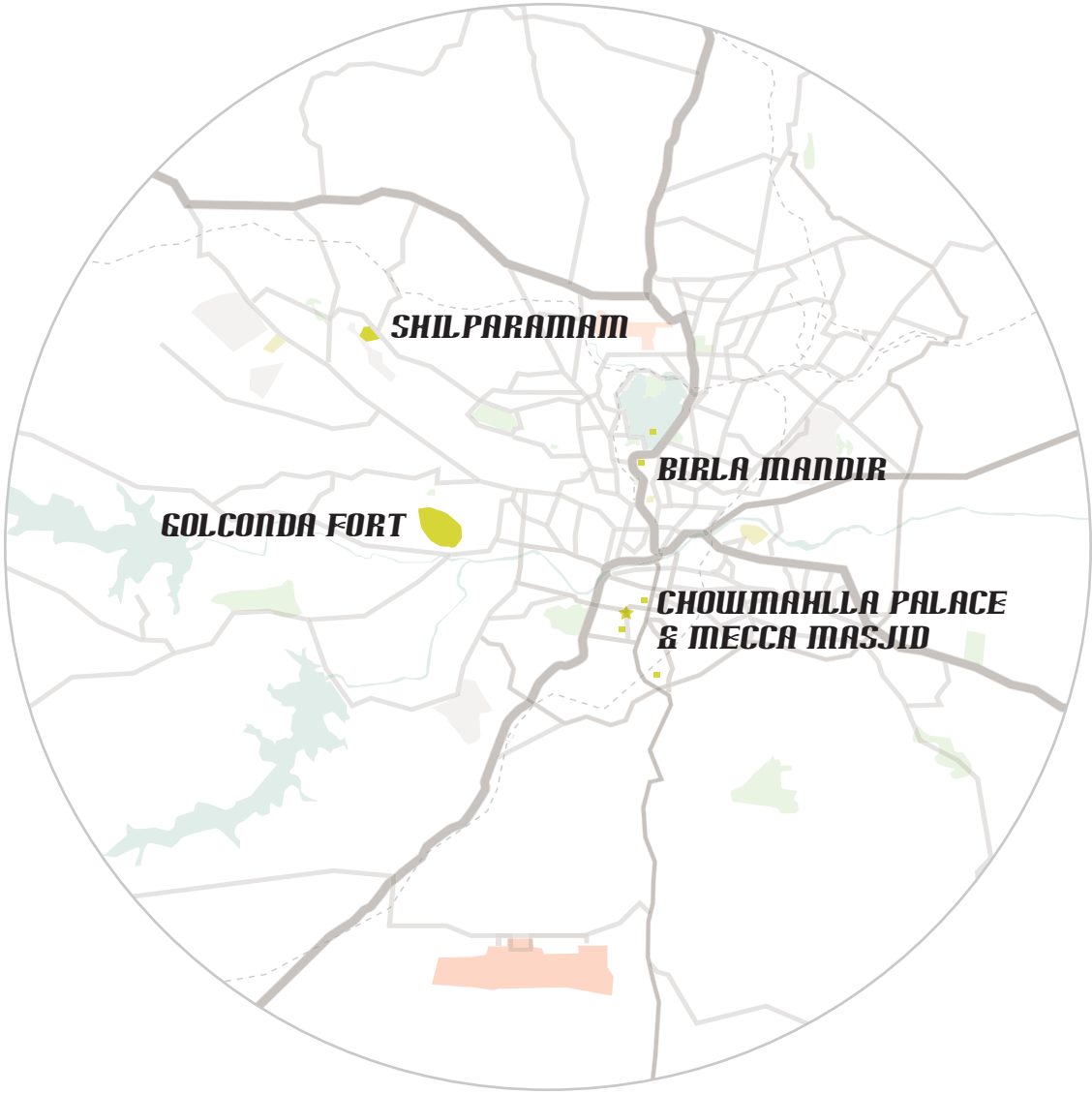


Figure 5.11 | Hyderabad Cultural Destinations
(top to bottom) Shilparamam Craft Marketplace, Goldconda Fort, Birla Mandir Hindu Temple, Chowmahalla place with Mecca Masjid in distance

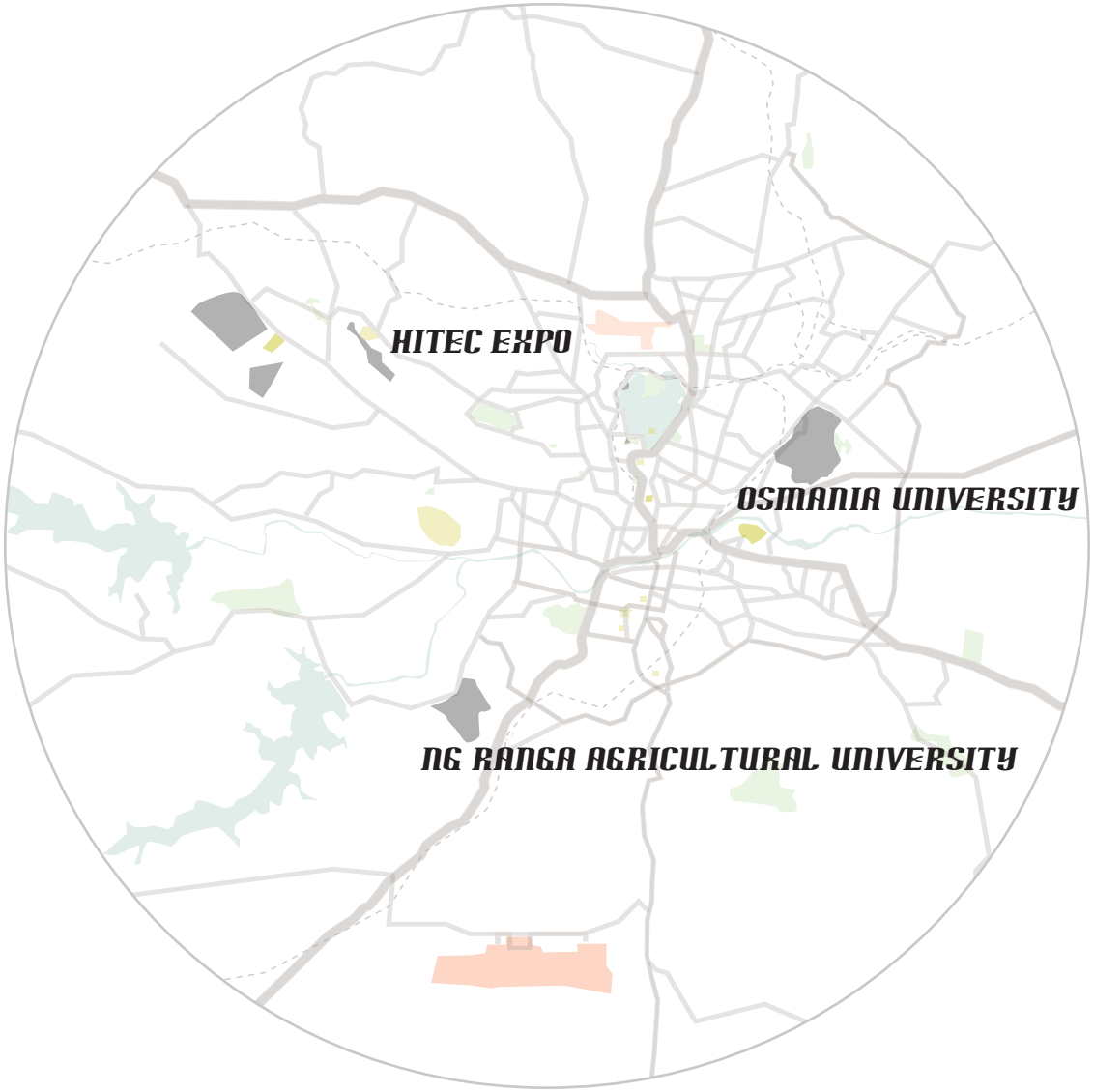


Figure 5.12 | Hyderabadi Institutions
(top to bottom) Osmania University, NG Ranga Agricultural University, HITEC City Exhibition Center

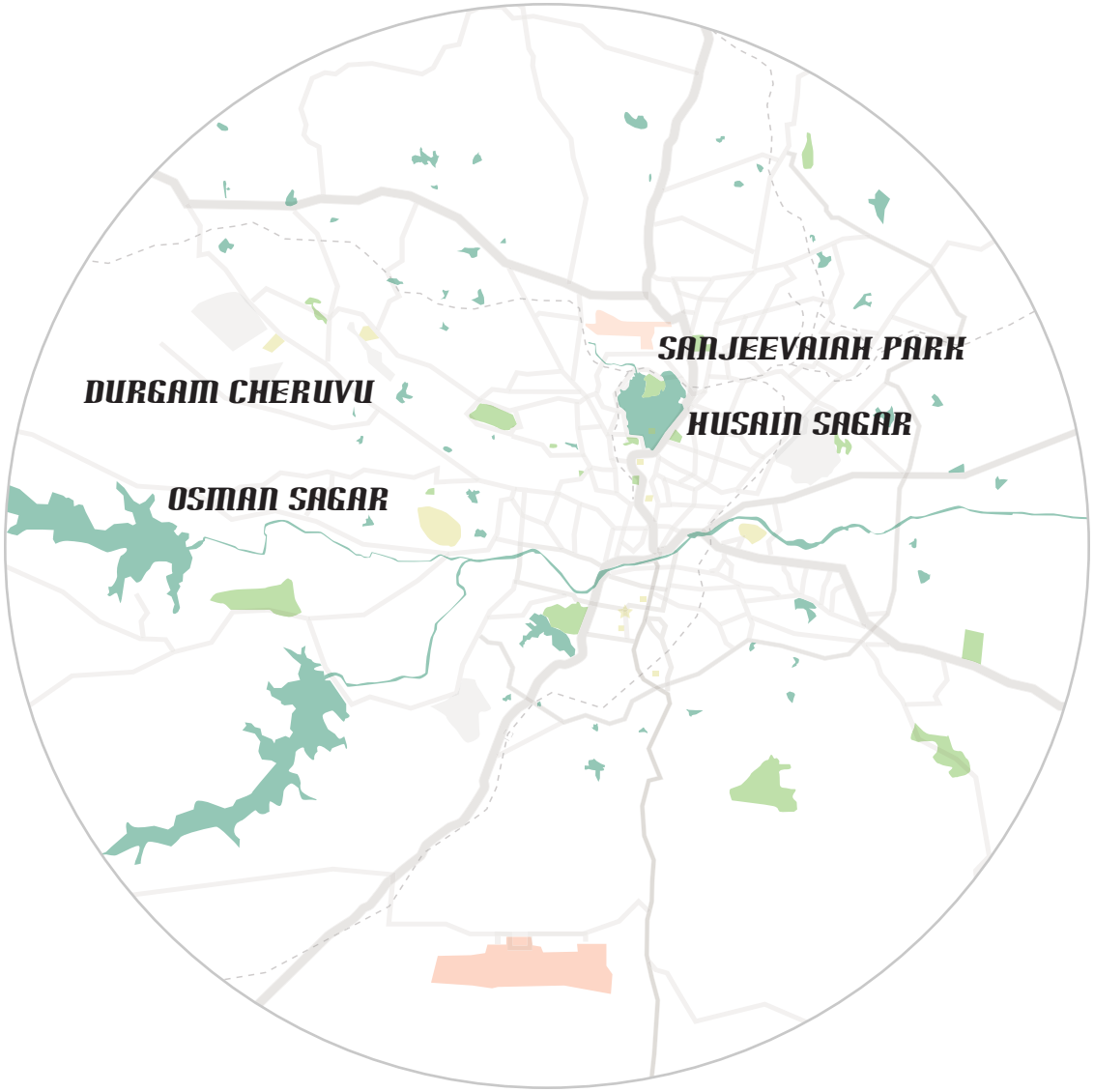


Figure 5.13 | Hyderabad Natural Resources
(top to bottom) Durgam Cheruvu (Secret Lake), Sanjeevaiah Park along Husain Sagar, and Garden along Osman Sagar

Figure 5.14 | Hyderabad Rail Infrastructure
(top to bottom) MMTS Station at HITEC City, Nampally Railway Station, Secunderabad Railway Station, and Kachiguda Railway Station

Figure 5.15 |Hyderabad Rotaries
Perhaps a post-colonial remnant, Hyderabad's road network has a series of rotaries many of which have prominent statues or other key features. The State Assembly and Prasads Multiplex, two of the cities important landmarks are located alongside significant rotaries.

Developing Hyderabad Today

"'Cyberabad' it may be, but Andhra Pradesh's capital is more diverse than rival Indian IT hub Bangalore. Home to development centers for Microsoft, Accenture, and IBM, it also has strong pharma and aviation sectors, plus a new international airport. But rapid change has stoked fears that megamalls will swamp this nexus of Indian culture." (Gibson & Rockwood, 2008)

Fast Company has listed Hyderabad as one of the key cities among twelve others in 2008. They point out that Hyderabad's diversity is its strength and that rapid growth is exciting but must be carefully planned and approached so that the city develops holistically. It is a city with a rapidly growing population and increasingly competitive on the global map of cities. One of the biggest challenges Hyderabad faces is updating and developing enough infrastructure to maintain the city and keep up with the growing population. By 2025, projections place Hyderabad's metropolitan population at 13.2 million people, and so the city has to make sure that it can adapt and function well with this increasing pressure. Of the big challenges, the most prevalent issue at hand is the sprawling developments on the outskirts of the city. Even though the process of suburbanization is continuing, there is an increasing population density at the core of the city but the infrastructure is not growing proportionally. Also there is a growing influx of poor and/or low education people who are accelerating the growth of informal settlements throughout the city. (Schwaiger & Rapp et.al., 2007) These are the pressures on which Hyderabad operates today and so the city has engaged various organizations to understand what to do about the future of the city. One example of which is the SHAKTI project which is a partnership between the University of Karlsruhe in Germany as well as a variety of private and public organizations throughout India and Hyderabad.

Urban Development Agencies

Hyderabad's urban development was primarily overseen by the citywide agency known as HUDA, the Hyderabad Urban Development Agency. Recently, however, this has changed to incorporate broader stretches of infrastructure and has transformed into HMDA, the

Hyderabad Metropolitan Development Agency. There is also the Greater Hyderabad Municipal Corporation (GHMC) that is in charge of many of the daily functions of the city. They provide a variety of permits ranging from urban development to birth certificates. (Greater Hyderabad Municipal Corporation, 2009) These various city organizations work together for planning out the future of Hyderabad. In addition to increasing cooperation between governmental sectors/city groups, recent changes in regulatory laws across India have paved the way for an enterprising and burgeoning private sector.

This steady growth in the private sector has resulted in many of them constructing and investing in public infrastructure. One of the most notable in Hyderabad is the new airport at Shamshabad; it was the first private-public partnership of its kind in India, between GMR and the state government of Andhra Pradesh as well as a few other stakeholders. This burgeoning role of private investment into public infrastructure seems to be increasingly globally. In Hyderabad it has allowed for fast progress to be made, because the time and resources of the private sector are driven by market forces. GMR was able to design and build the airport within the 3 year time frame that was initially set and it became the first major project within Hyderabad and perhaps within India to be completed in a timely manner. The company's presence has rapidly been increasing throughout Hyderabad through a variety of infrastructure projects. Its blossoming success has made it one of the most visible and potent organizations in the city.

Key Infrastructures

The critical infrastructures being developed throughout Hyderabad recently fall into the categories of transportation, air quality, water quality, waste, and energy. In addition to the new airport that has opened up there is the major Outer Ring Road project which will provide easier access to the airport and connect 25 towns around the city. Inside the city there is the Metro Rail Project (MRTS) which has already seen great success in connecting HITEC city with key destinations around the Husain Sagar. (Kumar, 2006, p. 167) Improving public transportation throughout the city will be essential for sustainable development for both environmental and social justice reasons.

India is rapidly expanding its private automobile sector but this is already having serious consequences along these issues. Not only are cars an inefficient form of transportation but they require an ever demanding expanse of roadways that are infeasible to build and maintain. The key to the sustainability of any city is the development of non or low-polluting public transportation and a huge push for non-motorized transportation. (Bidwai, 2007, p. 14) Hyderabad must critically and quickly focus its transportation efforts on equitable public modes as this promises the longest most sustainable vision of urbanization.

A key factor to keep in mind is that all infrastructural planning and development is intrinsically related to individuals' health as well as the health of the city. "Clean air and clean water as well as the utilization of energy-saving and pollution-reducing development design will contribute to reducing health costs and the need for health services." (Kushner, 2007, p. 5) Hyderabad has been developing its air quality through a variety of means. Perhaps most visible is the preservation and creation of green lungs or parks throughout the city. KBR park near Jubilee Hills as well as Nehru Zoological park are both approximately 300 acres each and in addition to other smaller parks improve air quality and the cities ecological habitats. (Kumar, 2006, p. 167) "Clean water is the most important resource for mankind." Hyderabad has four main water reservoirs; the two major ones in the southwest are the Osman Sagar and Himayat Sagar, while the smaller Manjira and Singoor are in the Northwest part of the city. (Kaschub, 2007, p. 47) The HMDA has been working on a phytoremediation plan for improving the quality of the central Husain Sagar reservoir. This includes the use of engineered wetlands in areas around the lake that will remove contaminants before they enter the lake. (HMDA, 2009) In addition to protecting the larger lakes, the various urban development agencies in Hyderabad have worked to preserve many of the smaller bodies of water through a Lakes Conservation Project. (Kumar, 2006, p. 168) There have also been numerous marketing campaigns to make citizens of the city aware of the pressing issues of water quality and protection in Hyderabad.

Integration

These are the various infrastructures that power and enable the city to function. Transportation is perhaps the key element that connects all the other infrastructures and has the opportunity to holistically link and protect other infrastructures. Hyderabad's future depends on this sustainable development model but it must be one that critically engages the city. Infrastructure cannot be a separate and invisible force that powers the city but must be made visible and actively involve the citizens to function. In addition due to the global nature of the 21st century the context of understanding Hyderabad extends beyond the city to the larger flows of India and the global networks of cities. The airport is the key infrastructure and urban element that connects all of these conditions together and so it can become the primary driver of sustainable development for a city.

Figure 5.16 | Sustainable Efforts in Hyderabad
Although Sporadic, these signs appear throughout the city encouraging residents to take care of the urban space. They serve as a reminder to protect the green elements of the city.

D / THE NEW AIRPORT

The New Hyderabad International Airport in Shamshabad was constructed in a span of three years and became operational from March 2008. There has been a great deal of celebration, fanfare and pride for the city due to the airport and the emergence of Hyderabad upon the global stage, mainly a result of its IT sector. There has also been a great deal of concern regarding the new airport, as it is located a great distance away from the heart of the city and the infrastructure required to reach it has been lagging in construction. Also the land around the city where the new airport has been constructed is leading to rapid development which is marginalizing the farmers and low-density industry located in this rural fringe south of the city.

Once again I spent one month at the construction site of the airport in July 2007 in order to understand the process of building an airport as well as experiencing life in Hyderabad. In March 2009 I made a 3 day stop to Hyderabad as a tourist and experienced the airport in its fully functioning form. These personal experiences along with a variety of planning guideline documents and interactions with the people working there have helped to shape this section of the thesis.

Forces that drove the development of a new airport

There were a variety of forces in India and Hyderabad that demanded the development of a new airport in the city. The growing IT sector and the increasing fluidity of people into and out of Hyderabad have placed huge strains on the older infrastructure of the city. The old airport at Begumpet was woefully inadequate for the size and scope of the city. It was state owned and run and this was the model of aviation throughout India, but then recently Hyderabad developed a unique private-public partnership for infrastructural development. GMR, a Hyderabadi company involved with infrastructural developments in fuel and power had created a bold vision for a new Hyderabad airport.

Figure 5.17 | Approaching the Airport on NH7
(top) July 2007 - Driving from the central city region of National Highway 7 to the village of Shamshabad and the airport, there is in abrupt transition from highrise offices to small village developments.
(bottom) March 2009 - the opening of the airprot has dramatically shifted the conditions with the construction of highways altering the fabric of development along this route


Hyderabad


Musi River


Urban Periphery


Shamshabad


Village

Approaching

Airport


New Highway

Interchange

Airport

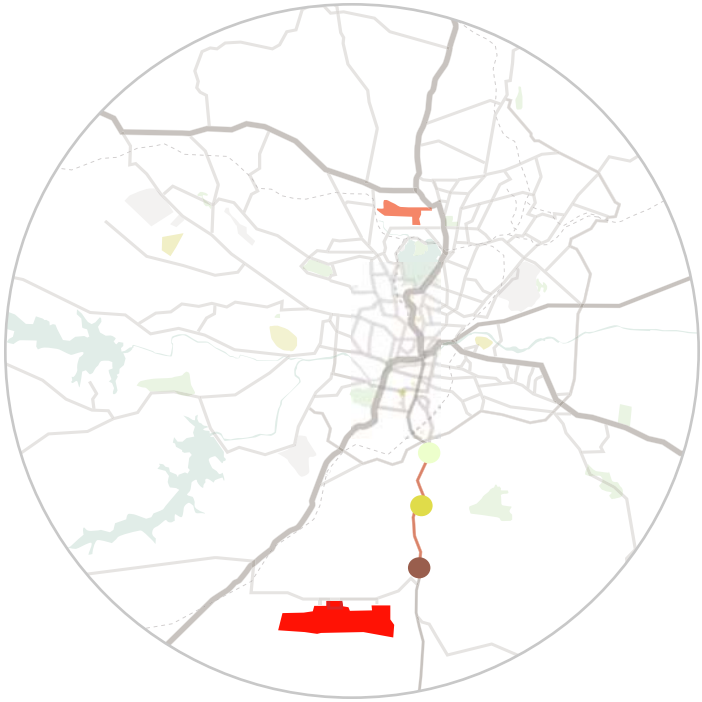


Figure 5.18 | Srisailam Road
The approach to the airport on the Eastern side along the Srisailam road reveals a great abundance of rocky outcroppings merged with the poorer Muslim quarters of the old city.

Airport Elements

Located in Shamshabad, the airport is on the urban fringes of the Hyderabad metropolitan area, 20 kilometers south of the main city. This has created a unique set of challenges for both the airport and the city. Constructing an airport this far away meant that there would have to be temporary and permanent housing and offices for all of the people who would be working there. The transportation to and from the site would have to provided for the staff, passengers, and all other people who would need to use the airport. This was challenging because the road infrastructure leading out of the city to the airport was a series of smaller local roads and not a major highway. The road finally leading to the airport is National Highway 7 which leads straight to Bengaluru.

Figure 5.19 | Approach Roads
(left) The major road leading the new airport is full of advertising
(right) The Srisailam approach features a natural rocky wall

NH 7 APPROACH

SRISAILSAM APPROACH

SIGN IN THE CITY

MAIN ACCESS ROAD ELEMENTS

Figure 5.20 | Main Access Road Elements
(left) Signage along the outer fringe of the airport incorporates all four languages of Hyderabad, but with English first, followed by Hindi, Telugu, and Urdu

(center) Stonhenge inspired rock sculpture in the rotary, unfortunately it is for viewing from the vehicle only

(top right) Example of a sign in the city leading to the airport

Figure 5.21 | Airport Village
This is a very interesting and innovative concept in an airport because it is a destination for both the arriving and departing passenger as well as a place for other people to stop and peruse as well

(left) The global face of franchised food: Mc Donalds

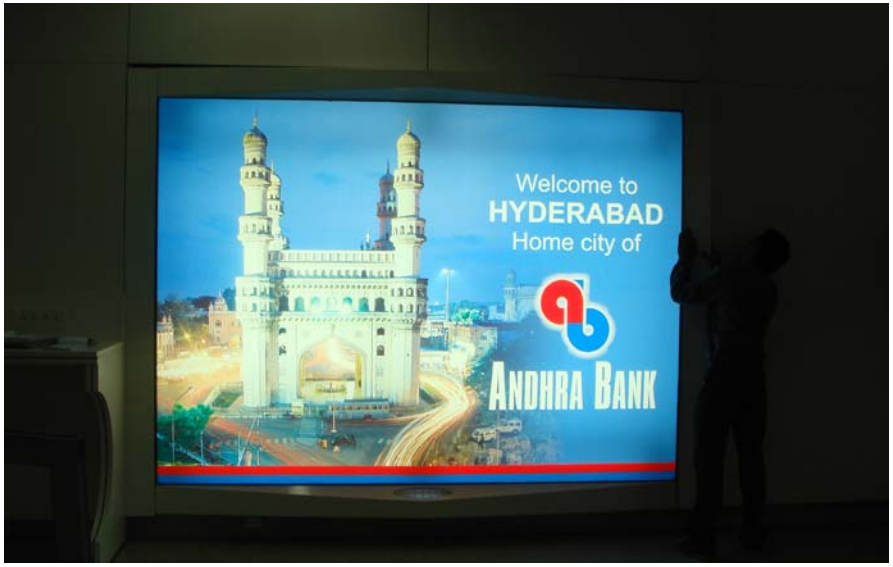
(right) Airport village signage is also in all four Hyderbadi languages

TERMINAL TYPOLOGIES

Figure 5.22 | Terminal Elements
(clockwise from top right) Religious iconography provides a strong sense of attachment to India, the main ticket area has a unique form and the offices are well integrated into the the use of the terminal., storage carts against the GMR logo, Etchings in glass of sites in and around Hyderabad

PLANTS IN THE AIRPORT

Figure 5.23| Plants
The use of greenwalls is rapidly grwoing across the world. In Changi Singapore the green wall is actually not a series of plants but rather just climbers. This system in Hyderabad is very innovative for using planted plants within an airport system.



CHARMINAR ON ALL ADVERTISEMENTS

Figure 5.24 | Cultural branding
(top) Examples of Charminar in advertising, these are just in the airport.
(bottom) Adveritinsg for a new TV show on the tickets followed by a localized safety card

CULTURAL ACCESSORIES OF FLIGHT

Hyderabad has built an airport that most or many are very proud of and this is evident throughout various media outlets including the comments of youtube.com videos on the new airport. With the opening of the building there was great anticipation and jubilation. However there are also many who are concerned about the sprawling nature of development that airport encourages because of its location far away from the city. People who have to work at the airport need to travel long distances to reach it and they are becoming further removed from the city. Also there is concern about farmers' land being seized for rapid development around the periphery of the outer ring road. In any case the rush to develop and build the city must be tempered and first placed within an environmental lens. The most important aspect of city planning now is to ensure that whatever measures being implemented are the best for long term sustainability of both environmental and human health.

Figure 5.25 | Excitement on Opening Day
On March 23, 2008, when the New Hyderabad Airport opened there were a great deal of people from around the city who celebrated the event with a great deal of pride.

Scenario Planning for Eco-infrastructure

"Scenario Planning is a tool that allows us to think outside of the box, constructing in time a series of possible futures. In contrast to myopic condition produced by forecasting, Scenario Planning seeks instead to describe the value-neutral territories that are the product of the interaction of forces called critical uncertainties. . . Scenario Planning is a method without an endpoint that can be employed at any time to produce feedback into a continuously evolving urban strategy." (Kahn, Thomsen, Golan, & Christensen) Scenario planning is a way of tempering rapid development and should be applied to Hyderabad so that caution can be exercised and that every decision can be viewed under the lens of long-term sustainability. It is a broad framework for urban speculation.

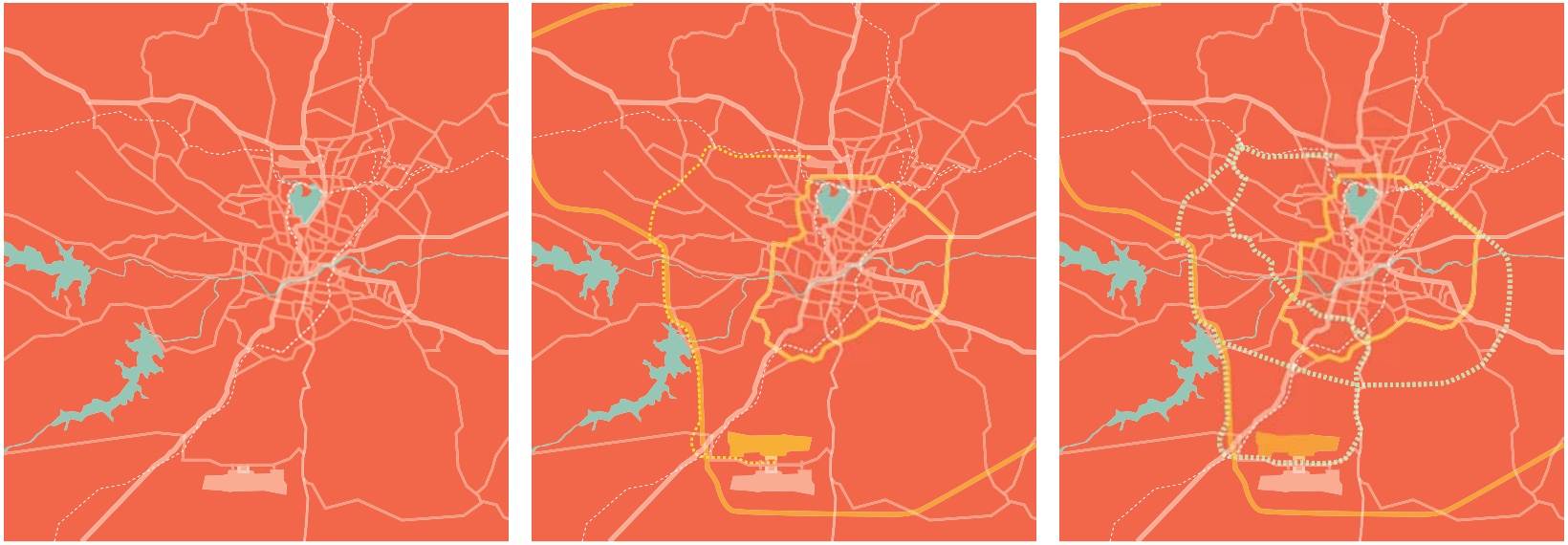


Figure 5.26 | Infrastructure of Mobility
Existing, planned, and future scenario of Hyderabad's transportation infrastructure. Currently the city is working on finishing the inner right road (in yellow) as well as key segments of the Outer Ring Road, which will connect the HITEC city area to the new airport. There is also a plan to develop a high speed rail corridor from the old airport at Begumpet to the new airport at Shamshabad via HITEC city. Public transportation is a vital step towards sustainable development of any city and so expanding upon the rail infrastructure to connect key city destinations and infrastructures would be one scenario that could promote both social justice and environmental stewarship.

What is the future land-use and urbanization plan for Hyderabad? How will it be changed and driven by the development of this new airport? What will be role of the rising of the infrastructural company GMR in advancing the future of Hyderabad and India? One of the most critical urban infrastructures of cities today is public green space, ranging from small pocket parks, to street trees, to the largest of urban parks. They allow a city to breathe both literally and figuratively. The active functioning of trees to remove pollutants and carbon dioxide from the air helps to create a more livable and sustainable urban habitat. Small parks and street trees are essential for spreading this habitable quality throughout the city. Large parks also do this, but they have another key function, they help to really shape and

image the city. Imagine Manhattan without Central Park, the large iconic 700 acre park really defines the urban shape and reach of the city. It gives an image and describable nature to the street network and allows one to easily visualize their position in relation to the park while navigating the city. Hyderabad has something similar already, the Husain Sagar Lake at the center of the city, this void on the street network really helps to image and form the urban shape of the city. However as the city expands further out from the lake it is in danger of losing its urban form and imagability. "An urban park of recognized landscape value symbolizes much more than its material qualities, and this is what imbues it with transcendental meaning. A successful park brings people together, creates a social bond and offers a truly welcoming environment." (International Congress of Urban and Metropolitan Parks, 2006, p. 24) Following these principles of urban design in application to the existing eco-infrastructure of Hyderabad a new speculative plan can be developed.

Necklace Plan for Sustainable Development

"Locating the landscape, rather than the city itself, at the heart of an urbanistic strategy offers flexibility. While the city remains free to evolve in many ways, the landscape can be protected to provide "identity." (Primas, 2008, p. 195) The landscape represents all of the urban elements but in this context it refers specifically to the natural elements that comprise a city such as its lakes and green spaces. Parks are often remarked as the 'lungs of the city.' This is actually what the parks in London were labeled in the 18th century by the Prime Minister, William Pitt the Elder. It was a time period when older parks were protected but they realized that newer parks would need to be constructed to improve the health of the rapidly urbanizing city. Parks are vital for improving multiple aspects of a city and its society's health. They provide mental and physical relief as well as a psychological respite from the dense city surrounding the urban park. Parks which are open public spaces to all citizens help to improve social equity and capital through multiple avenues. (International Congress of Urban and Metropolitan Parks, 2006, pp. 45-46) The expansiveness of landscape is an essential human need. (Coates, 2003, p. 295) One of the interesting things that locating the new airport south of the city is that it centered the heart of the city, the area around Charminar along a north south axis, and also placed the Musi River as the central east-west axis in the city. This centralization of

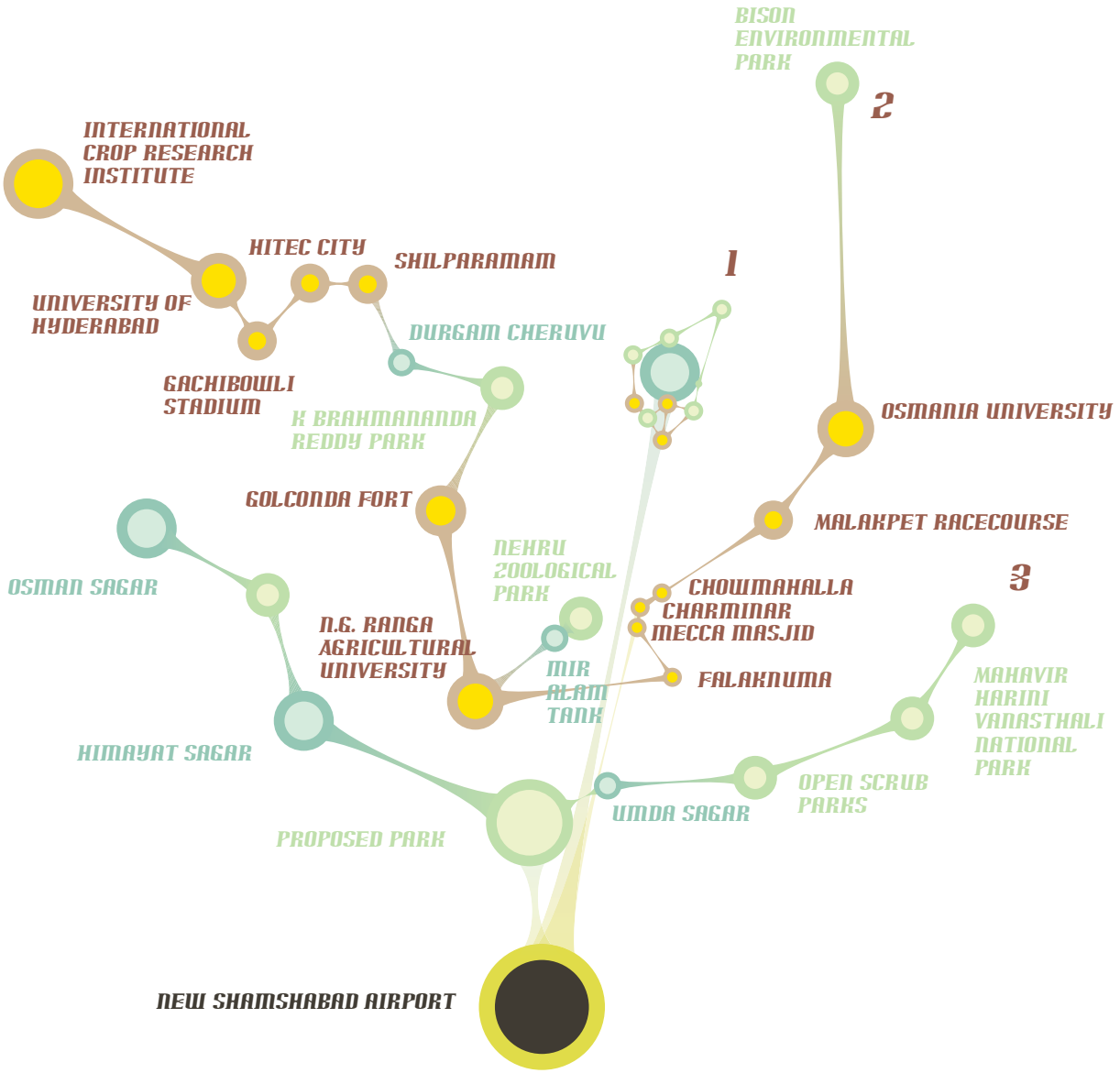


Figure 5.27 | Hyderabad Necklace Jewels
The various infrastructure, cultural destinations, and natural resources attach together in three tiers to form the jewels of a sustainable Urban Hyderabad.

key cultural and natural resources can be a powerful driving force for the protection and connection of these regions through ecologically sensitive corridors.

"My understanding of the term 'public realm' is of a space where people deal with strangers – where they encounter and interact with people who are unlike themselves. One classic locus for such encounters has been the dense city centre but it is far from the only one. The edges between any two communities – whether differentiated racially, in terms of wealth or in terms of their programmatic focus – could be a site where people interact. In fact the centre may well be a space that concentrates a lot of people who are similar while the edge becomes the real zone of encounter." - Richard Sennet (la Biennale di Venezia, p. 86)

This necklace plan connects the outer peripheries of Hyderabad with the inner destinations and resources using ecological corridors that rely upon non-motorized private and high speed train for public transportation. It is a model that integrates multiple modalities of travel at key transportation infrastructure nodes such as the new and old airports. It is a way of bringing people into exploring the city as well as a way of inner city dwellers to escape and reach the outer fringes of the metropolis. It attempts to circulate flows in the city as well as connecting the local forces of the city to global influxes and pressures. The necklace hearkens back to Hyderabad's historical obsession with jewels. It is also a further extension of the current necklace road around the Husain Sagar. The lake is the neck and the cultural amenities and features around it form the first loop. The cultural attractions centered along the row with the Charminar form the second loop of the plan. Finally the natural resource buffer that is proposed forms the outer loop of the necklace plan. This zone of existing parks and lakes as well as newly created ones will provide a natural buffer to protect the city from degradation by rapid development. The airport as the pendant ties all of these loops together into one coherent vision; it is the intertwining of the global with the local and this is driven by the airport.

NECKLACE PLAN OF SUSTAINABLE URBAN DEVELOPMENT

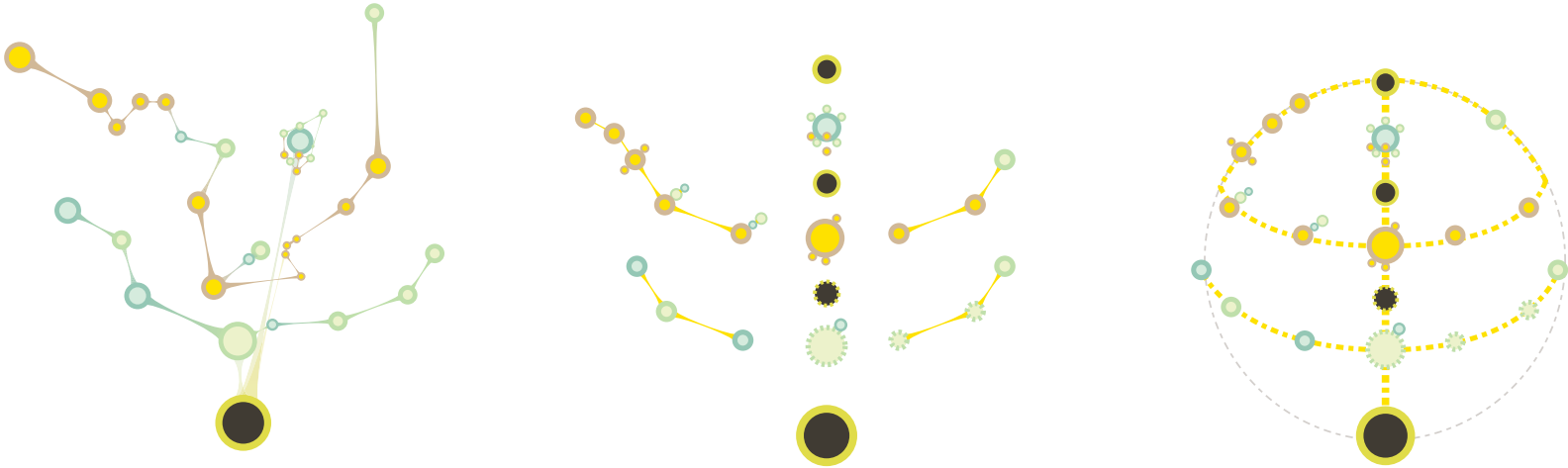


Figure 5.28 |Phasing of Necklace Plan
(left) The three loops of the necklace are chained together and all tied to the airport. This will involve the creation of ecological corridors and pedestrian pathways.

(middle) Further advancing this plan of development will require the creation of new public transportation nodes, most likely new MMTS train stations. These are indicated by the smaller black circles around either side of the Charminar (the central yellow circle)

(right) The final stage of the plan witnesses the complete connection of the necklace around the neck with full public transit access around and through the city.

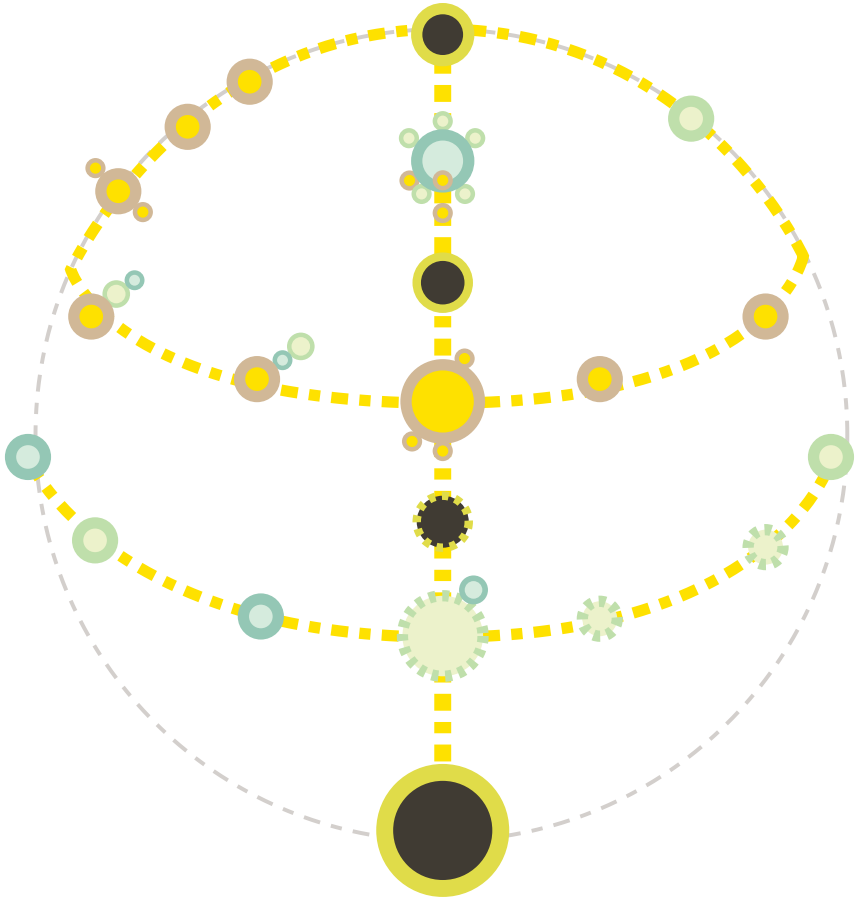


Figure 5.29 | Hyderabad Necklace
The whole city becomes linked an attractive and sustainable fashion. The Husain Sagar remains the neck, while the Charminar is at the center, a newly proposed park and the airport at Shamshabad are the large pendant that not only catalyzes and drives development but completes the fashion statement.
(photograph: stock photo from istockphoto.com)

Hyderabad becomes the green heart of India

Once Hyderabad forms a comprehensive sustainable development plan an opportunity arises to link it with the broader region of central India and on to the rest of the country. The Hyderabad-Bengaluru megalopolis has a high developmental potential, but the danger is that it might result in transport infrastructure that takes and chokes open land. However if an eco-sensitive green corridor is built around accessible public transit then the region will develop sustainably and attract even more investment. "Green spaces have a particularly significant role in mega-city regions. They fulfill important functions and are decisive for the quality of life within an urban region as well as for the way it is perceived. Green spaces are synonymous with relaxation and recreation, and these aspects, together with their transboundary character, mean that they can be a potent tool for the shaping of mega-city regions." (Bencseky, 2008, p. 244)

Hyderabad is at the center of a five pointed region radiating out to Mumbai, Nagpur, Vizag (Vishakhapatnam), Chennai, and Bengaluru. Developing a green heart involves connecting transportation infrastructure with green urban space and

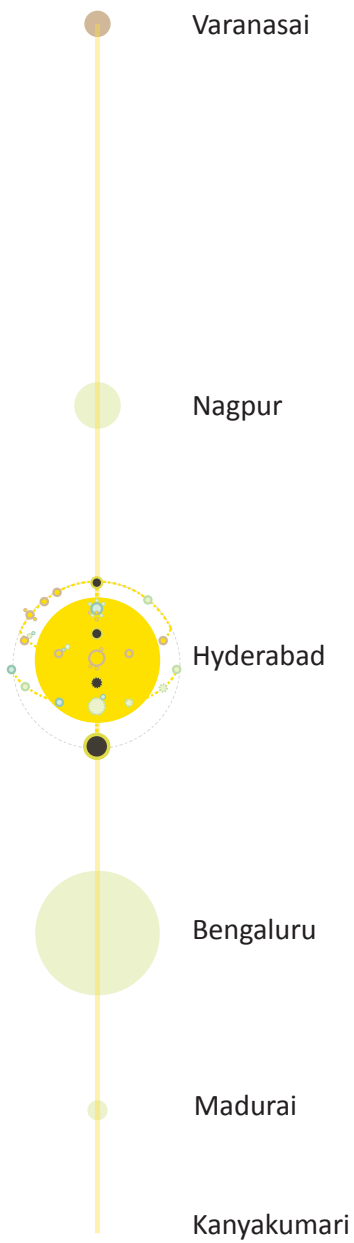


Figure 5.30 | National Highway 7
Hyderabad is at the center of the national highway which forms the spine of India, starting from the holy city of Varanasi in the north and ending at the tourist tip of India, Kanyakumari. The size of the circle is relative to the population of the city and the distance between the midpoints is scaled to represent the distance between the cities along the highway.

social destinations. The focus should start along National Highway 7 from Bengaluru to Nagpur three cities with new airports along this route. While the surrounding region of India develops the golden quadrilateral super highway infrastructure the central spine of India could be based upon an ecologically sound green infrastructure, which includes high-speed rail, public local transportation, as well as other key linkages. This will help to create a sustainable core through India centered along this spine.

This transit spine could develop into a high speed rail corridor that is primarily accessed from the airport, making it a multi-modal transit hub with Hyderabad at the center radiating south towards Bengaluru and north to Nagpur, and Delhi. Eventually this development could spur the upgrading of the current Mumbai Hyderabad express and perhaps connect it to coastal Andhra. This is an example of one urban development strategy that GMR could be very impactful in because of its leading position in infrastructure. By working along ecologically sound and sustainable practices, the region can be developed while helping to conserve its natural resources as well. The airport systems plug in along the train corridor and are the way for international passengers as well as city residents to reach these cities and places.
A focus on eco infrastructure can help to make the country more sustainable friendly and the eco-infrastructural development along transit corridors means that more people will be able to view this changing nature of development. This could lead to a burgeoning eco-tourism industry that is based on local sustainable efforts; something that is vital for the future of the soon to be world's largest country. Ecotourism as means of promoting and strengthening a countries cleanliness is a sustainable strategy. It is both at the large scale of cities as well as at the individual scale of shifting personal values and moralities. This strategy is being employed throughout the world, one shining example of which is the Central American nation of Costa Rica, ecotourism has earned the nation the top spot for clean countries in the Americas, and the 5th spot overall. (Stone, 2009) India should follow a similar model of ecotourism development along transportation corridors in order to develop a more sustainable country.

There are already ideal areas of ecotourism along this corridor, especially between Bengaluru and Nagpur. In Anantapur, Andhra Pradesh

Figure 5.31 | High Speed Rail through the Center
This is an image of a high speed train in Germany, currently it is the most ecological form of transportation that still works logistically, if integrated with airports and global travel they can catalyze sustainable development on a broader scale.
(image from flickr.com)

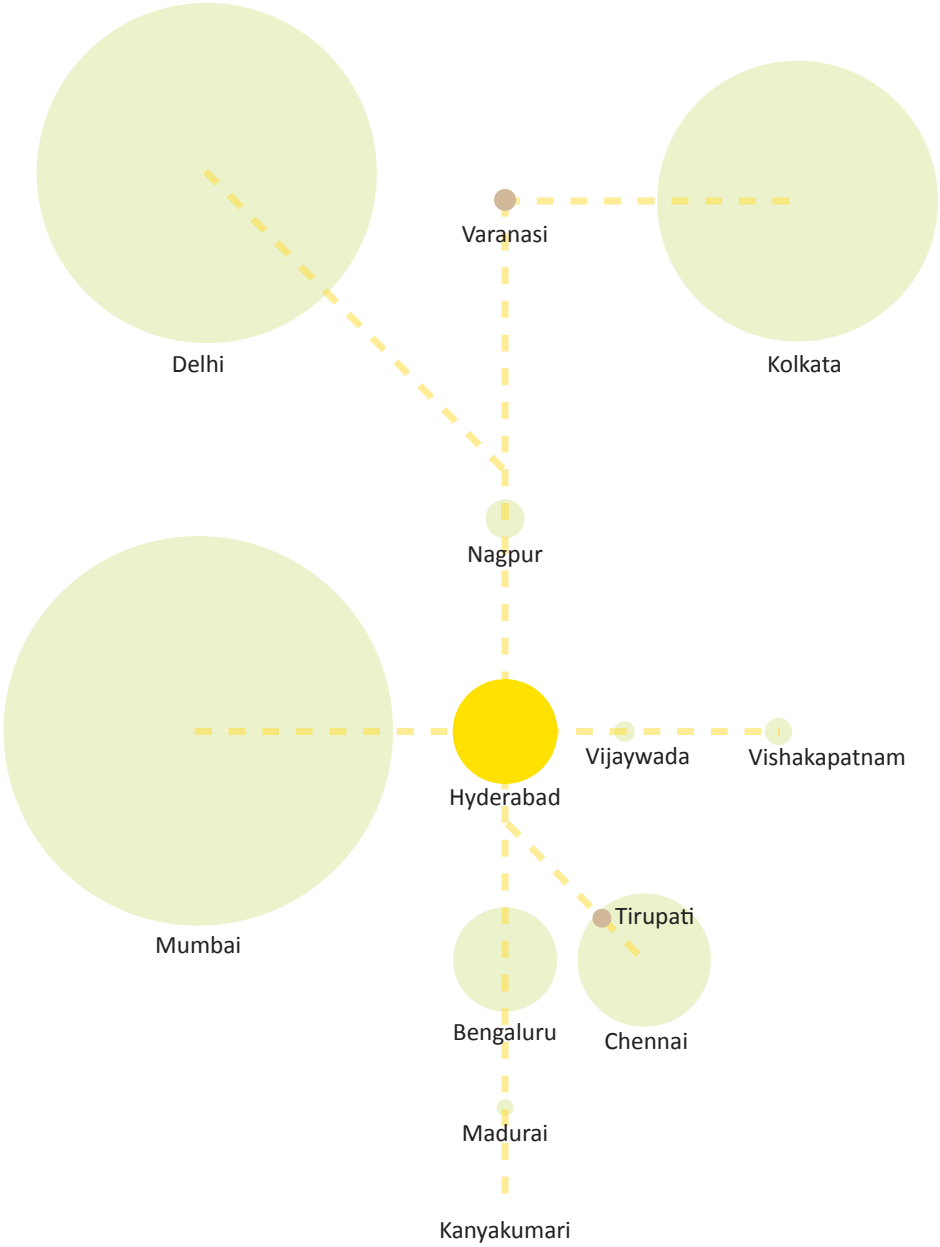


Figure 5.32 | Hyderabad at the Center
Hyderabad is at the center of the newly proposed rail corridor which forms the spine of India. The train is a more ecologically sensitive means of transportation for connecting the major cities as well as major religious/tourists sites.

there is an organization dedicated to permaculture and the celebration of life known as the Timbaktu Collective. It is a non-profit group that works to help marginalized communities and individuals; in March 2006 they were assisting 33,000 people in the Anantapur district. This is a city that is halfway between Bengaluru and Hyderabad and is along the existing train track right on National Highway 7. They work to revitalize forests and agricultural land that belongs to small and independent farms. They also work to rejuvenate traditional watersheds and water harvesting structures to promote ecological development. Working with Asha for Education they also assist in the education of rural children. They perform a whole host of various services all based on their philosophy of permaculture and celebration of the earth and life. The Timbaktu collective promotes active networking with all other organizations making them an ideal partner for eco-sensitive tourism. (Timbaktu Collective, 2009) Someone who wants to visit India but volunteer to do something worthwhile instead of just leading a consumerist vacation could work at the Timbaktu collective and learn valuable skills to bring back to their hometown. This is where the green ecological corridor from the airport comes in. International visitors and distant tourists would fly in to either the Bengaluru or Hyderabad airport and then take the train to reach Anantapur, as it is much more ecologically sensitive way of traveling. This is just one example of eco tourism that could be connected to new infrastructural developments.

Along this central Indian spine there are numerous national parks, especially around the Nagpur area, taking a train to visit these areas would be environmentally responsible. It is vital to integrate these smaller local efforts into the larger bustling world of the cities and ultimately into the airport, because most international passengers pass through the city without ever realizing or understanding the local problems and efforts for solutions. Concentrating multimodal transportation at the airport it helps to tie the global with the local, the essential ingredient for sustainable development.

Eco-sensitive Pilgrimages

Tirupati in southern Andhra Pradesh is perhaps the world's largest pilgrimage site with approximately 20 million visits annually. This

places a huge amount of strain on the transportation infrastructure in getting to the city. Currently there are daily buses, trains, and flights from most major Indian cities to Tirupati. Buses and trains are fairly ecologically sensitive but are much slower so there is still a large group of pilgrims who fly into the city, in order to make a quick weekend stop. High speed rail makes sense for this corridor to reach the pilgrimage site because the huge daily volumes of traffic. Along this corridor to the north lies Varanasi, one of the most important religious sites for Hindus, Buddhists, and Jains, among others. The tremendous amount of pilgrims traveling to Varanasi also could greatly benefit from the development of a high speed rail. Hyderabad's central location between Varanasi and Tirupati makes it an ideal hub for developing these new modalities of transportation infrastructure in India. These are just two of many important Hindu sites, but by starting with a central axis it is easier to branch out and create connections to other sites of high traffic.

Reconciling Religious Rifts

This central corridor is also ideally positioned to link the important Muslim sites of worship. Hyderabad and Delhi are perhaps two of the most important cities for Islam, and both are steeped in Islamic history. The airports in Hyderabad and Delhi both have a Hajj terminal, to facilitate the annual pilgrimage to Mecca. Delhi boasts India's largest mosque, the Jami Masjid, and Hyderabad's Mecca Masjid is also very large as well. This central ecologically sensitive corridor is ideal for connecting cities and religious pathways. By linking together both Hindu and Muslim corridors through these multimodal transportation infrastructures it might be possible to increase cross-fertilization and reconcile differences. Working together across religious barriers to develop a sustainable harmonious dwelling point is intrinsically linked to Hyderabad, further increasing the relevancy of this central corridor. GMR is in charge of both the Hyderabad and Delhi airports making it an ideal company for levering this position to develop a high speed rail corridor in the center of India. It is not just about the rail about integrating it with existing inner city infrastructures as well as the new international airports, but a change in people's attitudes and beliefs about our global future. Hyderabad's central location makes it ideally suited to catalyze this new consciousness in sustainable regional development.

F | HYDERABADI ANTHROPORTSCAPE

“We have the opportunity of forming our new city world into an imageable landscape: visible, coherent, and clear. It will require a new attitude on the part of the city dweller, and a physical reshaping of his domain into forms which entrance the eye, which organize themselves from level to level in time and space, which can stand as symbols for urban life.” (Lynch, 1996, p. 91)

With the integrated necklace plan for the sustainable development of Hyderabad and the green heart strategy for inserting Hyderabad into the transportation infrastructure of India it is now possible to envision an anthroportscape for Hyderabad. It is a design speculation amalgamation of both the city and airport’s futures. Hyderabad is an ideal hub for connecting a variety of initiatives throughout India; this multidimensional transaction of human potential must be allowed to prosper. The facilitation of moving a myriad of people through global hubs must also reciprocate itself back to the city. If Hyderabad simply becomes a hub of transitory passengers for facilitating Indian and global flight then it is not helping the future sustainability of the city. The process must be bidirectional where the masses of people flowing through are exposed to the ecological, social, and economical challenges as well as solutions that Hyderabad faces. Transportation hubs need to create opportunities for conversation, contemplation, and creativity. Positive optimism with actionable conversation is perhaps one of our most essential tools to be cultivated in order to solve the world’s biggest problems.

Exposing Resource Usage and Raising Ecological Awareness

Hyderabad’s urban population is expanding by 3% each year. Any new urban growth or development must take this into consideration, but it cannot happen at the expense of sacrificing natural resources and potential sources of ecological balance. While exposing the resource consumption problems associated with water, energy, and so on are good ideas for Hyderabad to engage in, it must be done with a bioregional focus and the issues should be made pertinent to the city and region. Hyderabad’s airport is one of the loudest voices for

that area and so should serve the city to make it a more sustainable place.

Save the Rocks and Water

"The other striking feature of Hyderabad, perhaps the most striking of all, is the rocks. They're everywhere, and noodling about their origins and history is diverting. One website describes them as '... eccentric looking rounded boulders perched precariously as if giants piled them up...', which is a better description than I could muster. Picture ant hills - they're solid enough for the ants to move around, but they're really made up of hundreds and hundreds of rocks, each of which is tiny on an absolute scale but enormous compared to the ant. That's Hyderabad." – flickr.com user anaxila (anaxila, 2005)

Figure 5.33 | Hyderabad Rocks
The unusual rocks that dot the Hyderabadi landscape should be celebrated. Infrastructural development is destroying these rocks, so making these issues at the airport could help to save them from destruction. *(image from flickr.com user anaxila)*

One of the most significant icons of the Hyderabadi landscape are the large natural sculptural rock formations. They have provided a unique backdrop to the city but with sprawling infrastructural development, the rocks are rapidly being threatened and demolished. Under these conditions a private group banded together, aptly named, "the Society to Save Rocks". The rocks provide three important functions for the city, first they minimize erosion; secondly they create environmental balance; and finally they protect ecosystems. Erosion is prevented with the rocks because during the mudslides caused by rains, the rocks act as anchors and prevent the soil from totally washing away. Another ecosystem consequence that is linked the rocks is an increase in rabies. Before the rocks are destroyed they act as homes for vultures, which normally pick off rabid animals, but without the rock habitats, the vultures leave and the rabid animals attack humans. The rocks also create ecological and geological diversity and provided interest to an otherwise homogenous landscape. (Vasu) The rocks are mostly granite and granite gneiss and are estimated to be over two billion years old. (Sengupta, 2007) The beauty

and awe of the rock spectacles help to inspire great creativity in photography, writing, drawing and beyond.

Protecting and celebrating these rocks should be one of Hyderabad's main priorities as it is so critical to protecting the city's identity and environment. The airport is a great place to feature and assist this cause. The central courtyard area of the car park features small rock displays on either side of a fountain. This could extend up past the fountain by the ramp to the upper floor of the airport village. A miniature series of rock sculptures could be placed in the main waiting area and it could be coupled with a kiosk about the society to save rocks and include ways to get involved as well as providing room for comments and ideas.

The fountains can also be extended to the higher platform of the airport village where the arriving passengers pass through on their way out of the airport to the city. Perhaps the actual fountains do not need to be expanded but issues about water problems in Hyderabad could be made apparent here. As mentioned previously the cities reservoirs are in bad condition and powerful solutions are needed to make a difference. The best way for solving these problems is to reach as broad of an audience as possible in order to find creative interdisciplinary solutions. Also instead of just highlighting the problems, there should also be an exhibition on current ideas and solutions such as the use of phyto-remediation to improve the Husain Sagar.

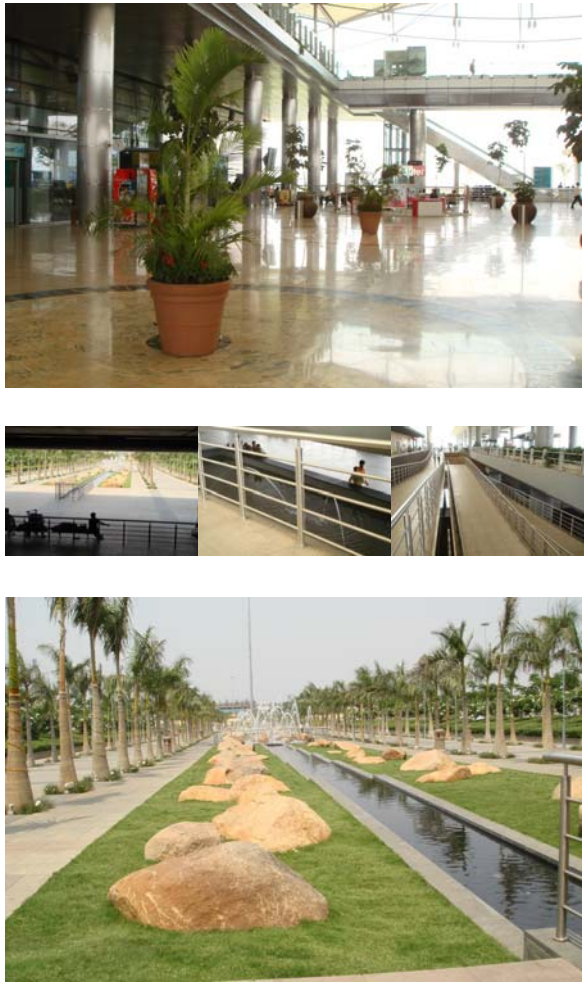


Figure 5.33 | Save the Rocks
How can the rock formations of the rotaries and parking lot be exteded to the airport village, a place where people can have meaningful conversation and discussion about the issues facing Hyderabad. The Society to Save Rocks should be featured in the airport village. The same marketing and design issues pertain to the water as well.

(HMDA, 2009) By raising these issues at the airport someone from halfway around the world might have witnessed a similar problem and has a solution that might possibly work. The airport village is the perfect place to raise many of these concerns because it is open to both the passengers as well as meeters/greeters. It is one of the key elements in connecting the airport to the larger cultural and natural identity of Hyderabad.

Trip to Charminar

Preservation and celebration of the historic core of Hyderabad seems to be one of the persistent challenges for the city. The Charminar is used in all advertisements of the city but the physical site is in disarray and seemingly neglected. That is to say, it shouldn't become a commercialized tourist destination; it needs to be given more attention regarding its cultural preservation. It is quite amazing in how the building is so plainly integrated into the daily fabric of the old city. If the road infrastructure and security details can support it, there could be a bus tour from the airport to the Charminar area, as there is in Singapore. It would just be a straightforward visit for those passengers who were experiencing a long layover during their transition period. Another strategy is instead of just using the Charminar as an image for branding the city there could be interactive displays about historical preservation and the architectural history of the city. Using the previously mentioned GigaPan technology maybe there is a challenge placed in the airport about creating the most informative documentary or funny movie with the Charminar or other historical sites.

Hyderabad joins the Creative Cities Network as one of the first Film Cities

Regarding cinematography and movie making, Hyderabad is the home of Tollywood, the Telugu film industry, the second largest in India after Bollywood. Tollywood movies have been gaining increased viewership and financial backing making them a sound foundation of Hyderabad's economy. Ramoji Film city and other unique resources make Hyderabad the center of a regional language movie power-house. Hyderabad has the largest number of theaters in India including the world's largest IMAX and a dedicated movie-going audi-

ence throughout the city. This ideally positions Hyderabad to join the UNESCO Creative Cities Network as a Film City. (UNESCO, 2009) Currently there are actually no other film cities, the only category without a current representative city. If Hyderabad moves fast this acknowledgement could really help boost regional film and preserve the culture around it. The whole idea of the creative cities is that they engage everyone and are not just a top down marketing strategy. So in order to live up to the spirit and name of this initiative, the application should be made to engage the public. At the airport there could be a variety of interactive features that engage all the people passing through or staying at Hyderabad to participate in the efforts to nominate the city as a UNESCO Creative City.

Connect to Cyberabad

Creative engagement especially through interactive experiences can be quite powerful for not only simultaneously providing meaning and entertainment but is also a way of devising new ideas. The Hyderabad of the 21st century is the city of call centers and they are increasingly relevant part of the south Indian techno-cities. "It is often argued that as information and communications technologies allow virtual access to all forms of information, social and economic actors are becoming increasingly liberated from the constraints of space or the so-called friction of distance. Such technologies are also deemed to be eroding the role of place as the central unit of organizing social life." (Coe & Yeung, 2004) The authors of this quote argue that this is not necessarily the case because there are whole slew of socio-cultural factors that drive the enterprises behind e-commerce. This might be so but there is an increasing awareness that working in call centers can very frustrating and the added placeless dimensions makes it even worse. Usually these phone exchanges involve a great deal of frustration both on part of the caller and the call center customer service agent. This social woe is something that can be adapted in interesting ways at the airport. Airports usually incite frustration especially when passengers are bumped or flights are delayed, even though it is frustrating it usually provides people with a story that they can tell to others. It would be interesting to connect these frustrated individuals at the airport with the sometimes frustrated workers of the call centers in a virtual game of tall-tale telling. In a way it is about connected frustrated strangers who are both in pseudo-placeless environments to see if they might make something of the situ-

ation. It is emblematic of the new age of the digital communication and the advent of websites such as Omegle, where you simply talk to strangers. (Omegle, 2009) To facilitate this at the airport there could be call center like booths and using it would be like Omegle over the telephone.

Healthy Sustainable Urban Planning

A key part of the anthroportscape concept is connecting the airport to the city so that it can drive sustainable urban planning and development. The corridor and areas around the airport are key open spaces that must be understood in the larger developmental context. The earlier presented necklace plan, for example, connects key natural and cultural destinations with low impact transportation corridors mostly served by public transit. The current inner ring of necklace road has already been successful in stringing together many city attractions around the Husain Sagar. The second ring is currently only conceptual but it starts in the west at HITEC city swoops down towards the fort at Golconda, going across to the old city around the Charminar and finally ending near Osmania University. The outer ring connects all of the reservoirs and open scrubland along with a potential site for a large public park. All of the features and attractions of these rings in the anthroportscape concept would become connected to the airport, so that a broader group of people can become aware of what is happening in Hyderabad. As the largest and most connective of infrastructures airports are strongly identifiable within a large urban context, properly situating them for spreading awareness of the city, throughout the city and world.

As mentioned earlier, Hyderabad needs to work harder to protect its natural resources of rocks and water. The airport can help to drive these initiatives as well as the creation of more public parks. Parks provide vital public space to a city that helps to bring people together for healthy activity. The common open urban space standard is a minimum of 2.5 acres of parkland for every 1,000 people in the city. (The Trust for Public Land) Hyderabad only has approximately .1 acre of parkland for every 1,000 people. Using public parks listed on Google Earth, the three largest emerged as KBR National Park at 326 acres, Zoopark at 290 acres, and Sanjeeviah Park at 99 acres. There

are a few more large public parks such as Indira Park, NTR Gardens, and the Osmania University landscape garden that fall between 30 and 70 acres. All the remaining parks are under 20 acres trailing off towards the very small parks under 2 acres each. These are rough estimates of park area as they were calculated from Google Earth aerials but the total public parkland for Hyderabad tops out around 990 acres. Hyderabad's population is estimated to be somewhere between 7 to 9 million people, which means that the city needs approximately 20,000 acres of parkland to reach the required standard for cities. This is a quite a drastic jump, but perhaps this need to develop more public parks could be driven by the airport. A plan to develop park infrastructure could be the focus of an interactive exhibit featured throughout the terminals and larger airportscape. By engaging both international passengers, local residents, and all the other people passing through or living in Hyderabad, it might be possible to raise support for such a sustainable agenda.

These are just a handful of ideas for connecting the airport to the city in creative ways that promote sustainability through conversation. Ultimately designing a Hyderabadi Anthroportscape involves reexamining the urban planning strategy for the city at both the macro and micro scales. The airport brings to the front all of the issues of sustainability in both design and use. It leads naturally to thinking about the future planning efforts and direction for the city, region, and country in the long term. Who should be responsible for making these decisions? Is it from the highest level policy, or from the city municipality, the private infrastructure developers, or a bottom up community driven approach? In any case it seems that there is a need to involve more people in the process of airport design as they are not just an isolated urban element but rather a key infrastructure that drives and powers the entire city as well as global network. This is an interactive strategy to program airport space in a way that is both contextually sensitive and engaging to use.

6. ARCHITECTS OF ANTHROPORTSCAPES

"During two periods of intense interest (1927–30 and 1937–40), planners expressed some of their earliest, most basic ideas concerning the relationship between airports, cities and city planning. Planners essentially viewed airports as parts of the local transportation infrastructure and envisaged the airplane as contributing to urban decentralization." (Daly Bednarek, 2000)

Planning around airports has significantly changed since the 30s and 40s, they have become much more than just local transportation infrastructure. Although early planners saw airports as contributing to decentralization, the new wave of interdisciplinary anthroportscape planning proclaims that they can stitch the urban fabric together. Airports can be the catalyst for sustainable urban development; they have great potential for being envisioned from the ground up. This will require broader planning and restructuring of who designs and develops airports. "A new approach is required, bringing together airport planning, urban and regional planning, and business site planning in a synergistic manner so that future aerotropolis development will be economically efficient, aesthetically pleasing, and socially and environmentally sustainable." (Kasarda, 2009) Coalitions of engineers, businessmen, planners, and architects have traditionally been the people who put airports together. With the changing scope and program of airports there needs to be a broader coalition of people who design them. Currently airports are talked about by the city and then their feasibility and legal requirements are drawn up by city planners. It is then the architect who comes up with the vision and image that is then translated into the final product by the engineer. Historically there were a broad group of people that were brought together to design and build airports. John F. Kennedy Airport in its 23 year transition from inception to development involved several mayors, administrators, planners, architects, engineers, landscape architects, and several other specialists. (Gordon, 2004, p. 186)

However, with this new paradigm of anthroportscapes comes a new group of people who need to be fully integrated into the process of

designing an airport. They cannot just be brought on as specialists designing a certain aspect of the airport but must be involved from the beginning in planning the core aspects of the airport program. Airports have always demanded a broad coalition of professionals, but their design has usually not been open to such broad discussion. Who are some of the people who might be critical in driving the anthroportscape concept?

Anthropologists, sociologists, and psychologists could be indispensible in understanding people in spatial places, and may well come up with new ideas and strategies for building social-capital and nurturing a forum for conversation. In our increasingly fluid and networked world, people are moving faster than ever but might be struggling to find identity and meaning. Research in the social sciences, especially in place and the psychological problems of placelessness could be applied to airport design. How can the building function to give people a heightened sense of awareness about themselves and their surrounding context? The airport can actually be designed to help people discover meaning and purpose in their fast-paced lives. The work in the fields of anthropology, sociology, psychology, and associated disciplines regarding these issues might be influential in fundamental airport design decisions.

Figure 6.1 | Kolkata Anthroportscape
The masterplan for the new Kolkata airport seems to be an interesting example of collaborative partnerships between architects and landscape architects from the earliest stages. The airport provides a large park for the city to use. From the exterior sitting topiaries to the interior decorations of the walls there are inscriptions of Rabindranath Tagore's poetry in Bengali, infusing the airport with cultural identity.

Information scientists are already working with airports in designing and managing the flight tracking system. Most of their work has been behind the scenes in coordinating and articulating the myriad of computer systems to control flight s. Information scientists understand crucial airport systems and so they need to be involved in the design process from a more fundamental level. It is not just layering information over the top of architecture, but instead, how new technologies in communication work hand in hand with architecture to design anthroportscapes. The way in which information reaches all people throughout the airport is an important challenge that involves information scientists collaborating with a wide variety of other designers.

Also increasingly important with airport design is a partnership between architects and artists. For example at Washington National Airport's North terminal there is an interesting program in place for this called the Architectural Enhancement Program. This terminal designed by Cesar Pelli was a strong framework for allowing art pieces to be holistically incorporated into the building. The airport brings together artists with architects not just to provide additional dressing but rather to fully integrate the two in designing vital airport underpinnings. (Thomas-Emberson, 2007, p. 70)

Finally but perhaps most essential to this new wave of airport design is the landscape architect. Landscape architects work at a very wide series of scales, known as long-zoom thinking it is exactly what is needed in anthroportscape design. The architect has their hands full with all the minutiae of terminal design that they don't truly have enough energy to put into thinking of the larger connection between airport and city. The planner works at large scales, but often doesn't have the human-scale design experience that is demanded by this new paradigm of airport design. Therefore it is the landscape architect that can mediate the various scales; while ensuring a constant framework for human-scale habitable design. Additionally with the increased importance of infusing the terminal with the natural ecologic context the landscape architects knowledge and expertise would be invaluable.

Landscape architects have had a long interesting history tied with airport development. Early airport plans, with strong symmetrical layouts along the runway axes were talked about in parallel with the formal garden. Fairfax airport in Kansas City employed landscape architect Ernest Herminghaus to suggest a scheme for the landscape in relation to the airport, and he provided a long reflective pool of water lilies that was visible from the air. (Gordon, 2004, p. 48) Nowadays, landscape architecture publications are increasingly featuring the work of airports. For example in one of the premiere landscape architecture publications, Topos, the 2005 issue on transportation featured two airport landscape architecture projects, Ben Gurion in Israel and Brisbane, Australia. Both projects highlighted the critical nature of the airport landscape in these airports; they served to create cultural identity and accessible public space. Landscape architects have a great deal to offer to the core airport design process.

The processes of multinetwork design is extremely complex, there is no longer one designer as the sole expert for determining what is best for a given situation. “Drosscapes require the designer to shift thinking from tacit and explicit knowledge (designer as sole expert and authority) to complex interactive and responsive processing (designer as collaborator and negotiator).” (Berger, 2006, p. 3) Although the quotation refers to drosscapes (the liminal waste spaces throughout our cities) it is directly applicable to airports as well. Anthroportscapes are not built by architects, engineers, and businessmen, but rather emerge from the collaborative discussion and design evolution between as wide a swath of professionals and citizens as possible.

CONCLUSION

At the beginning of the 21st century the world is faced with numerous challenges. With an exponentially growing population and massive flows of people into cities, issues of sustainable development move to the forefront. The world is becoming increasingly interconnected through a variety of levels and this intensification of globalization has brought many benefits as well as negative side effects. At this critical juncture in our human history one structure is entangled in all of these questions, the airport. It is one of the most revolutionary human structures and it has come to symbolize many things. On the one hand it is about commercial globalization, consumerism, and capitalism. On the other hand the spectacle of flight and the airport has the power to captivate the human imagination, with the power and audacity to suggest a brighter more sustainable future. My research has explored this dialectic and suggested shifting the paradigm of airport design away from simple efficiency and towards a richer paradigm that incorporates conversation, sustainable thinking, global understanding, linkages to natural systems, along with a new non-consumer consciousness.

This is where the anthroportscape enters. It is an amalgamation of anthro meaning human, and portscape referring to the broader urban landscape of city's ports. The term airport does not adequately capture the rich experience of what the building offers today. These ports have transcended their primary function of facilitating flight and offer a wide range of experiences ranging from shopping to relaxing. This thesis explores the human element in airports as well as the element of airports in the city, hence anthroportscapes.

The questions and hypothesis of this thesis are a culmination of my lifelong experiences and observations traveling through airports. This provided a solid foundation for my work but to understand the issue from a broader perspective I created a web based survey which allowed people to share their stories about airports, travel, cities, and flight. This was a fairly open ended survey which left a lot of room for reflection. I asked questions about why people travel; what their favorite city and airport was; where they would like to go; questions

about travel preferences and habits; numerous questions about airports; and questions about their flight habits. In the end I had 107 responses for my survey with a 54 to 46% male to female ratio, but the age range is predominantly in the 18-24, and 25-34 range. Some of the other important biases in my data are that approximately half of the respondents are in the field of landscape architecture and furthermore the majority of the respondents are from the United States.

On the final page of my survey I had three important questions which were about the new paradigm of airport planning that my thesis is trying to suggest. The first of these questions is, "Do you think airports should reflect the local architecture, culture and customs of the city or region in which they exist?" Many airports are often not representative of the cities which they serve and instead have become part of a ubiquitous global brand of architecture. People travel to different places to explore new cultures and different ways of life, and the airport is usually the first or last gateway to that travel destination. The response to this was 92% believe that airports should reflect the local identity while 8% don't think so. This is the hypothesis that I have been working on and it provides great support to all the different avenues of expressing local culture that I have been exploring.

The second question was, "Do you think the airport should be a destination open to anyone, instead of being limited to only those with tickets?" I believe that airports should become a public destination and not just a facility for those who can afford air travel. However only 37% of the respondents agreed with this; the 63% who said no cited a variety of reasons, the most prominent of which was security and congestion concerns. These are definitely valid and I've thought of them, but I'm still thinking about how airports could be designed in multiple layers so that even someone who is picking up a guest can spend some time and enjoy the atmosphere of the airport.

The final question was, "Do you think there should be more conversation and social interaction between the millions of people passing through airports?" This is a really crucial point of my thesis, because I believe that airports should not believe anonymous zones of tran-

sit, but rather should become forums on discussing sustainability and cultivating global understanding. This question received a break-down of 71% for increased interaction and only 29% against it. This helped to confirm my hypothesis that people are looking for a richer more meaningful transit experience at the airport. With this evidence from the survey I am working on a variety of design solutions for airports that could allow for a better reflection of local identity, more democratic use of terminals, and finally more social interaction.

Combining these general design guidelines I have applied them to a case study of one city and airport, Hyderabad, India. This is a very unique emerging global city that has a strong personal connection for me. Hyderabad has just built a new airport and is planning additional infrastructure projects it is vital to understand their broader role in the evolution of a more sustainable Hyderabad. I spent one month at the airport in July 2007 while it was under construction and then just visited in March 2009 once it was complete. My design guidelines are tailored specifically to the conditions of Hyderabad and propose a scenario planning vision to create more sustainable, habitable, and culturally identifiable infrastructure. These speculations on Hyderabad's urban future still need to explored with more focus, it was beyond the context of this thesis but I plan on pursuing it in the future.

The final chapter touched upon the role of landscape architects as well as other non-traditional disciplines in this new century of airport design. Landscape architects work at multiple scales and are also especially trained for understanding ecological systems and sustainable development. This knowledge and background will make landscape architects vital assets in the future of airport design and planning.

Airports are amazing structures and have inspired people throughout the first century of architecture. They have the ability to bring massive groups of people together from around the globe, and this is critical to their future significance. Many of our large global problems result from problems of communication and understanding, so if airports become places of conversation where people can engage with each other, they might become places of global healing. The next stage of their development will involve a broader push into the

urban setting where they will be able to drive agendas of sustainability, culture, and global understanding. Their purpose and program is becoming much more multi-faceted requiring a broader group of designers and thinkers to work on planning and building them. This collaborative approach is essential for healthy progress it is a natural system of checks and balances throughout the building process. The airport is the one place where many of the important elements of the world at the beginning of the 21st century - globalization, cities, networks, sustainability, and diversity can be found. Airports are a crucial part of the solution to many of the world's problems, they just need to be thought of a bit differently.

THE END

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6.1 | Kolkata Airport

* All Images without credits were taken or made by the author

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